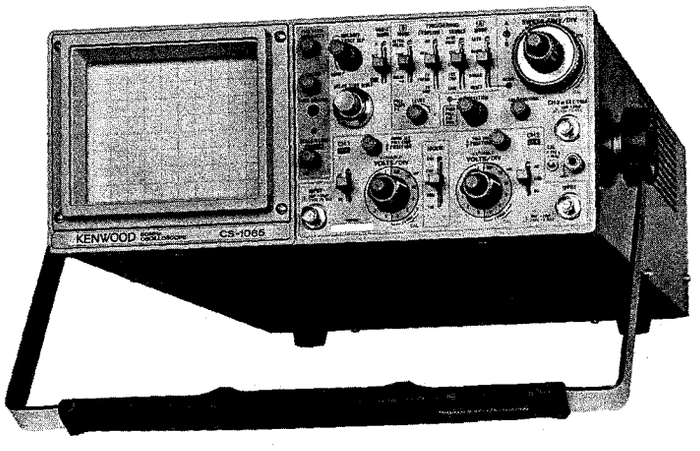
KENWOOD

TRIPLE TRACE OSCILLOSCOPE

# CS-1045
# CS-1065

## SERVICE MANUAL

KENWOOD CORPORATION



**WARNING**

1. The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform servicing other than contained in the operating instructions unless you are qualified to do so.

2. High voltage up to 12000 volts dc is present when the oscilloscope is operating. Line voltage (100 to 240 VAC) is present on the power transformer, on-off switch, fuse holder, and line voltage selector any time the oscilloscope is connected to an ac power source, even if turned off. Always observe caution when the housing is removed from the unit. Contacting exposed high voltage could result in fatal electric shock.

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# SPECIFICATIONS

| | CS-1065 | CS-1045 |
|---|---|---|
| **CRT** | 150PTM31<br>Rectangular, with internal graticule | 150RTM31<br>Rectangular, with internal graticule |
| Acceleration Voltage | 12 kV | |
| Display Area | 8×10 div (1 div=10 mm) | |
| **VERTICAL AXIS** | **CH1 and CH2** | |
| Sensitivity | 1 mV/div to 5 V/div, ±3% | |
| Attenuator | 12 steps, 1 mV/div to 5 V/div in 1-2-5 sequence.<br>Vernier control for fully adjustable sensitivity between steps. | |
| Input Impedance | 1 MΩ ±2%, approx 20 pF | |
| Frequency Response | | |
| 5 mV/div to 5V/div | DC; DC to 60 MHz, −3 dB<br>AC; 5 Hz to 60 MHz, −3 dB | DC; DC to 40 MHz, −3 dB<br>AC; 5 Hz, to 40 MHz, −3 dB |
| 1 mV/div, 2 mV/div | DC; DC to 20 MHz, −3 dB<br>AC; 5 Hz to 20 MHz, −3 dB | DC; DC to 15 MHz, −3 dB<br>AC; 5 Hz to 15 MHz, −3 dB |
| Rise Time 5 mV/div to 5 V/div | 5.8 nsec or less | 8.8 nsec or less |
| Rise Time 1 mV/div, 2 mV/div | 17.5 nsec or less | 23.4 nsec or less |
| Signal Delay Time | Approx.20 nsec on the CRT screen | |
| Crosstalk | −40 dB minimum | |
| Operating Modes | CH1; single trace<br>CH2; single trace<br>DUAL; CH1 and CH2, dual trace<br>ADD; CH1 + CH2 added as a single trace<br>TRIPLE; CH1, CH2 and CH3 triple trace | |
| Chop Frequency | Approx. 250 kHz | |
| Channel Polarity | Normal or inverted, channel 2 only inverted | |
| ⚠ Maximum Input voltage | 500 Vp-p or 250 V (DC+AC peak) | |
| **VERTICAL AXIS** | **CH3** | |
| Sensitivity | 0.5 V/div ±3% | |
| Input Resistance | 1 MΩ ±2% | |
| Input Capacitance | Approx. 20pF | |
| Frequency Response | DC: DC to 60 MHz, −3 dB | DC: DC to 40 MHz, −3 dB |
| Rise Time | 5.8 nsec or less | 8.8 nsec or less |
| Signal Delay Time | Same as CH1 and CH2 | |
| ⚠ Maximum Input Voltage | 50 V (DC+AC peak) | |
| **HORIZONTAL AXIS** | **Input thru CH2**, ×10 MAG not included | |
| Operating Modes | With HORIZ MODE switch, X-Y operation is selectable<br>CH1; Y axis<br>CH2; X axis | |
| Sensitivity | Same as vertical axis (CH2) | |

# SPECIFICATIONS

| | | CS-1065 | CS-1045 |
|---|---|---|---|
| Input Impedance | | Same as vertical axis (CH2) | |
| Frequency Response | | DC; DC to 1 MHz, −3 dB<br>AC; 5 Hz to 1 MHz, −3 dB | |
| X-Y Phase Difference | | 3° or less at 100 kHz | |
| ⚠ Maximum Input Voltage | | Same as vertical axis (CH2) | |
| **SWEEP** | | | |
| Type | | A; A sweep<br>ALT; A sweep (intensified for duration of B sweep) and B sweep (delayed sweep) alternating<br>B; Delayed sweep<br>X-Y; X-Y oscilloscope | |
| Sweep Time | A | 0.05 μs/div to 0.5 s/div, ±3% in 22 ranges, in 1-2-5 sequence.<br>Vernier control provides fully adjustable sweep time between steps. | 0.1 μs/div to 0.5 s/div, ±3% in 21 ranges, in 1-2-5 sequence.<br>Vernier control provides fully adjustable sweep time between steps. |
| | B | 0.05 μs/div to 50 ms/div in 19 ranges, in 1-2-5 sequence. | 0.1 μs/div to 50 ms/div in 18 ranges, in 1-2-5 sequence. |
| Sweep Magnification | | ×10 (ten times) ±5% (0.05 μs~0.2 μs; ±8%) | |
| Linearity | | ±3% all ranges,<br>±5% on 0.05 μs/div to 0.2 μs/div range at ×10 MAG. | |
| Holdoff | | Continuously variable from NORM to more than ten times (MAX) | |
| Trace Separation | | B sweep can be separated from A sweep up to 4 divisions, continuously adjustable. | |
| Delay Method | | Continuous delay (STARTS AFTER DELAY), Trigger delay (TRIG, TV. LINE), Zero delay (DELAY TIME ZERO) | |
| Delay Time | | From 500 nsec to 0.5sec. Available delay time is 0.2 to 10 times the A sweep time setting, continuously adjustable. | |
| Time difference measurement accuracy | | ±2% | |
| Delay Jitter | | 1/20000 of ten times of A sweep time setting | |
| **TRIGGERING** | | | |
| Trigger mode | | AUTO, NORM, FIX, SINGLE-RESET | |
| Trigger source | | V.MODE; Trigger selected by vertical MODE switch.<br>CH1; Triggered by CH1 signal<br>CH2; Triggered by CH2 signal<br>CH3/EXT; Triggered by CH3 signal<br>LINE; Triggered by line voltage | |
| Coupling | | AC, HFrej, DC, TV FRAME, TV LINE | |
| Trigger sensitivity | | FREQ.RANGE / INT / EXT | FREQ.RANGE / INT / EXT |
| | DC | DC-50 MHz / 1 div / 0.5 Vp-p<br>DC-60 MHz / 1.5 div / 0.8 Vp-p | DC −40 MHz / 1 div / 0.5Vp-p |
| | AC | Same as for DC but increased minimum level below 10 Hz | |
| | AC, HF rej | Increased minimum level below 10 Hz and above 20 kHz | |
| | TV | FRAME, LINE / 1 div / 0.5 Vp-p | FRAME, LINE / 1 div / 0.5 Vp-p |
| | | AUTO: Same as above specifications for above 50 Hz.<br>FIX: Same as above specifications for above 50 Hz. | |

# SPECIFICATIONS

| | CS-1065 | CS-1045 |
|---|---|---|
| **CAL** | 1 V, ±3%, square wave, positive polarity, approx 1 kHz | |
| **INTENSITY MODULATION** | | |
| Sensitivity | +5 V (positive voltage decreases brightness) | |
| Input Impedance | Approx. 10 kΩ | |
| Usable Frequency Range | DC to 5 MHz | DC to 3.5 MHz |
| ⚠ Maximum Input Voltage | 50 V (DC+AC peak) | |
| **VERTICAL AXIS SIGNAL OUTPUT** | CH1 OUTPUT | |
| Output Voltage | Approx. 50 mV/div into 50 Ω | |
| Output Impedance | Approx. 50 Ω | |
| Frequency Response | | |
| 5 mV/div to 5 V/div | 100 Hz to 60 MHz, −3 dB into 50 Ω | 100 Hz to 40 MHz, −3 dB into 50 Ω |
| 1 mV/div, 2 mV/div | 100 Hz to 20 MHz, −3 dB into 50 Ω | 100 Hz to 15 MHz, −3 dB into 50 Ω |
| **POWER REQUIREMENT** | | |
| Power Supply | 100 V/120 V/220 V/240 V ±10% | |
| Line Frequency | 50/60 Hz | |
| Power Consumption | Approx. 61 W | |
| **DIMENSIONS (W×H×D)** | 319(359)×132(145)×380(454) mm<br>( ) dimensions include protrusion from basic outline dimensions | |
| **WEIGHT** | Approx. 9.2 kg | |
| **ENVIRONMENTAL** | | |
| Within Specifications | 10°C to 35°C, 85% max. relative humidity | |
| Full Operation | 0°C to 40°C, 85% max. relative humidity | |
| **ACCESSORIES SUPPLIED** | | |
| Probe | PC-29.....2 | PC-20....2 |
| Spare Fuse | 1 A.....2<br>0.7 A.....2 | |
| Instruction Manual | 1 | |

* Circuit and rating are subject to change without notice due to developments in technology.

# SAFETY

## SAFETY

Before connecting the instrument to a power source, carefully read the following information, then verify that the proper power cord is used and the proper line fuse is installed for power source. The specified voltage is shown at the fuse holder of the AC inlet. If the power cord is not applied for specified voltage, there is always a certain amount of danger from electric shock.

**Line voltage**

This instrument operates using ac-power input voltages that 100/120/220/240 V at frequencies from 50 Hz to 60 Hz.

**Power cord**

The ground wire of the 3-wire ac power plug places the chassis and housing of the oscilloscope at earth ground. Do not attempt to defeat the ground wire connection or float the oscilloscope; to do so may pose a great safety hazard. The appropriate power cord is supplied by an option that is specified when the instrument is ordered.

The optional power cords are shown as follows in Fig. 1.

**Line fuse**

The fuse holder is located on the rear panel and contains the line fuse. Verify that the proper fuse is installed by replacing the line fuse.

**Voltage conversion**

This oscilloscope may be operated from either a 100 V to 240 V, 50/60 Hz power source. Use the following procedure to change from 100- to 240 volt operation or vice versa.

1. Remove the fuse holder.
2. Replace fuse F 1 with a fuse of appropriate value, 1 amp for 100 VAC to 120 VAC operation, 0.7 amp for 220 VAC to 240 VAC operation.
3. Reinsert it for appropriate voltage range.
4. When performing the reinsertion of fuse holder for the voltage conversion the appropriate power cord should be used. (See Fig. 1.)

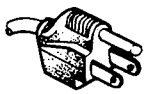
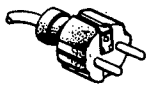
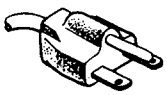
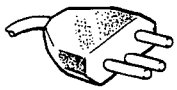
| Plug configuration | Power cord and plug type | Factory installed instrument fuse | Line cord plug fuse | Parts No. for power cord and plate |
|---|---|---|---|---|
|  | North American<br>120 volt/60 Hz<br>Rated 15 amp<br>(12 amp max; NEC) | 1 A, 250 V<br>Fast blow<br>AGC/3AG | None | Cord:<br>E30-1820-05 |
|  | Universal Europe<br>220 volt/50 Hz<br>Rated 16 amp | 0.7 A, 250 V<br>Fast blow<br>5×20 mm | None | Cord:<br>E30-1819-05 |
| | U.K.<br>240 volt/50 Hz<br>Rated 13 amp | 0.7 A, 250 V<br>Fast blow<br>5×20 mm | 0.7 A<br>Type C | — |
| | Australian<br>240 volt/50 Hz<br>Rated 10 amp | 0.7 A, 250 V<br>Fast blow<br>5×20 mm | None | Cord:<br>E30-1821-05 |
|  | North American<br>240 volt/60 Hz<br>Rated 15 amp<br>(12 amp max; NEC) | 0.7 A, 250 V<br>Fast blow<br>AGC/3AG | None | — |
|  | Switzerland<br>240 volt/50 Hz<br>Rated 10 amp | 0.7 A, 250 V<br>Fast blow<br>AGC/3AG<br>5×20 mm | None | — |

**Fig. 1 Power Input Voltage Configuration**

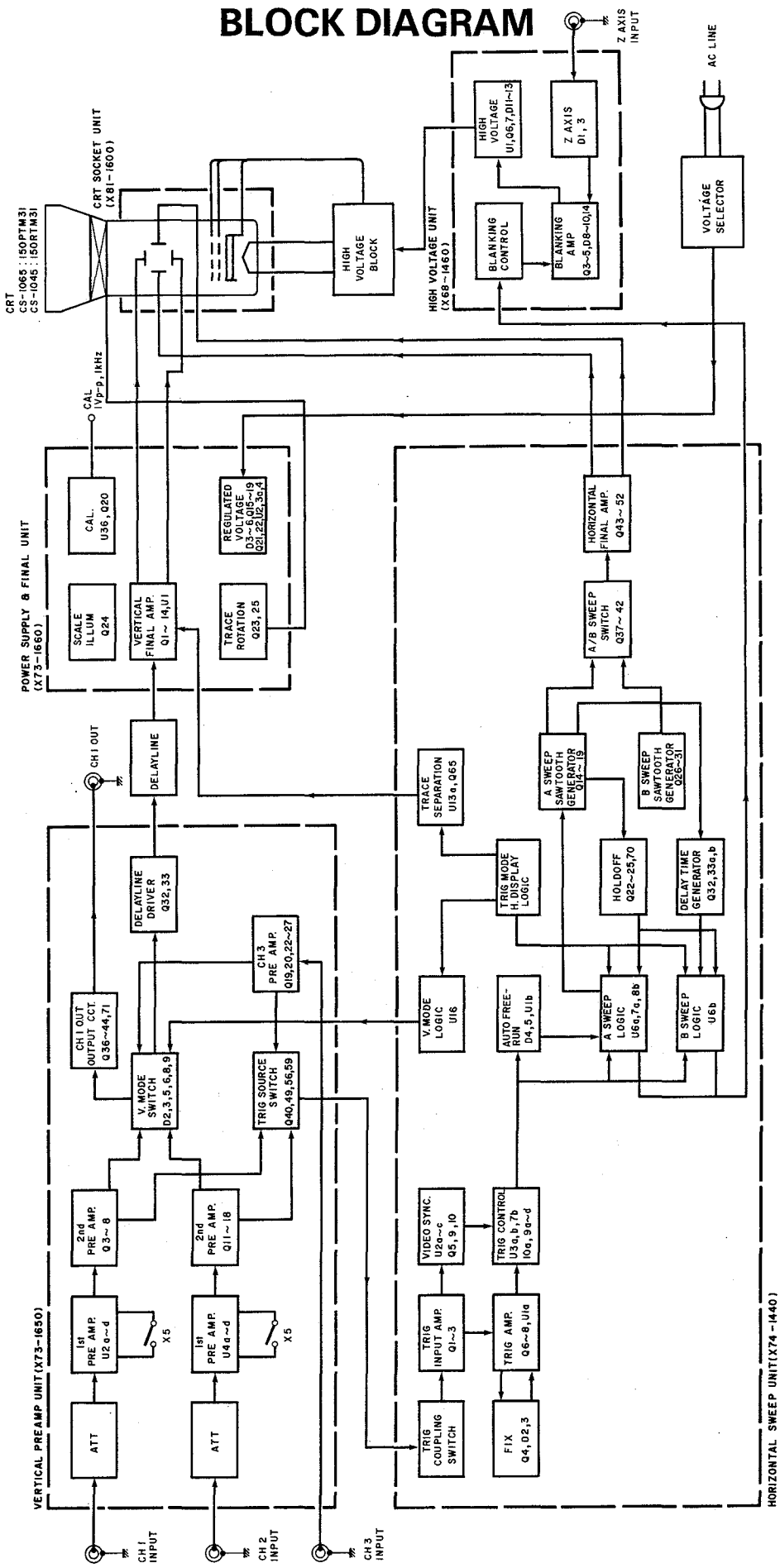



**Fig. 2**
**Block diagram**

# CIRCUIT DESCRIPTION

## 1. VERTICAL PREAMPLIFIER CIRCUIT (X73-1650)

The signals from the input BNC of channel 1 and channel 2 are attenuated to a suitable value by 1st ATT, Q1, Q2, and Q69 of the head amplifier (Q9, Q10, and Q70 for channel 2), and 2nd ATT, and are then sent to U2a-e, Q3 and Q4 of the 1st preamp. DC feedback is applied to the head amplifiers from the op amp in order to reduce DC balance drift. The 1st preamp is a selectable gain type amplifier. When the range is set to 1 mV/div or 2 mV/div, the gain of the 1st preamp becomes 5 times the normal gain. Also, an adequate CMRR is obtained.

The signals from the 1st preamp pass through the emitter follower consisting of Q65 and Q66, then enter the 2nd preamplifier-cum-vertical mode switch consisting of Q5-Q8. Here, the CH1 ~ CH3 signals are switched by the V-MODE switch, and then sent to the delay line driver. Like the CH1 signals, the CH2 signals pass through the head amplifier, U4a-e, and Q11-Q14 of the 1st preamplifier, Q67 and Q68 of the emitter follower, and Q15-Q18 of the 2nd preamplifier. Q11 and Q14 are for CH2 INV, and are not provided in channel 1.

The input sensitivity of channel 3 is 0.5 V/div which is low compared with that of the other channels, hence 1/10 ATT is provided at the input. The signals which are attenuated by ATT pass through Q19, Q20, Q22, and Q23 of the head amplifier, then enter Q24-Q27 of the mode selector which is equivalent to the 2nd preamplifier of channel 1 and channel 2.

The delay line driver consists of Q30-Q33. Of these, Q32 and Q33 are connected in cascode with the basedgrounded transistors Q1 and Q2 in the first stage of the vertical final amplifier. The delay line is inserted between the collector and emitter of this cascode amplifier.

## 2. TRIGGER SIGNAL SWITCHING CIRCUIT (X73-1650)

The trigger signals which are output differentially from each channel enter Q36-Q40, Q45-Q49, and Q52-Q56 of the respective trigger switching circuits. The line trigger signals from the power supply circuit enter the trigger switching circuit consisting of Q57-Q59.

The four trigger signals (Channel 1 to Channel 3, and LINE) pass through Q57-Q60, and are selected in accordance with the switching signals from the horizontal sweep unit. They then pass through the trigger output amplifier consisting of Q60 and Q61, and are sent from P10 to the horizontal sweep unit.

The signals from CH1 OUT are branched from the trigger switching circuit of channel 1, then pass through Q42, Q43, Q71, and Q44 of the output circuit, and are output from P17.

## 3. VERTICAL FINAL AMPLIFIER (X73-1660)

The signals which pass through the delay line are terminated by Q1 and Q2, and then amplified by Q3-Q6 of the cascode amplifier in the next stage.

The signals which have been converted to low impedance by the emitter follower of Q7 and Q8 are amplified to the 2.3 V/div (one side) deflection sensitivity of the CRT by Q9-Q14 of the final stage amplifier.

U1 is a servo circuit which is designed to regulate the operating point of the final stage amplifier. By means of this circuit, the deflection plates are maintained at a constant average voltage.

## 4. POWER SUPPLY CIRCUIT (X73-1660)

The power supply provides five regulated voltages, two unregulated voltages, and also one scale illumination output.

When the power switch is turned ON, first +10 V is provided by Q22 and U2a, and −10 V is provided by Q21 and U2b. The 5 V, 55 V, and 120 V outputs are regulated with reference to this −10 V.

Q26 and Q27 are ripple filters which are used for the unregulated +12 V and −12 V voltages.

The voltage for the scale illumination lamp is rectified by D6 and controlled by Q24.

## 5. TRACE ROTATION AND CAL CIRCUIT (X73-1660)

The trace rotation circuit is consisted of emitter follower of Q23 and Q25. It drives the rotator coil which is located on the cone of the CRT. The CAL circuit is an oscillator circuit consisting of the op amp U3b. It generates 1 kHz square wave which is switched by Q20 to become a 1 Vp-p CAL signal.

## 6. BLANKING CIRCUIT AND HIGH VOLTAGE CIRCUIT (X68-1460)

The unblanking signals from P11 are inverted and amplified by the blanking amplifier consisting of Q3-Q5, and are then superimposed on the cathode voltage by the DC recovery circuit consisting of D8-D10.

Q1 and Q2 constitutes an inverted amplifier for autofocusing. It creates the focusing voltage from the blanking signals. The focusing voltage is superimposed on the high voltage by the DC recovery circuit consisting of D4-D6, and then used to drive the focusing electrode. The −1.5 kV high voltage for the cathode is generated by the converter oscillation circuit consisting of U1, Q6 and Q7, and also the high voltage converter block (W02-0423-05). Negative feedback is applied to the converter oscillation circuit from the cathode in order to obtain a regulated high voltage.

# CIRCUIT DESCRIPTION

## 7. TRIGGER CIRCUIT (X74-1440)

The trigger signals sent from the vertical system pass through P10 then enter the trigger amplifier consisting of Q1-Q3, Q6, and Q7, where they are amplified to operate the ECL logic. Q4, Q8, and U1a constitute the trigger level setting circuit which is used for FIX synchronization. This circuit detects the peak-to-peak value of the signal, and takes it off as a center point voltage.

Q9 is a sync separator circuit which is used for TV synchronization. It clamps the sync tip and extracts the sync pulses. These pulses are then passed through an integrating circuit consisting of R39 and C19 in order to obtain the vertical sync pulses.

The signals which leave the trigger amplifier are waveshaped by the Schmitt trigger circuit consisting of U4a and b, and the trigger slope is selected by U4c. These signals and the previously mentioned TV sync pulses drive the subsequent horizontal sweep circuit.

## 8. HORIZONTAL SWEEP CIRCUIT (X74-1440)

When the trigger pulses trigger flip-flop U6, the output will be inverted, and the Miller integrater circuit, which consists of Q16, Q17 and a group of RC circuits that can be selected by a rotary switch, starts the sweep. The sweep signal is output for an interval (sweep length) determined by the comparator consisting of Q20 and Q21, and the RS flip-flop consisting of U5a and U10b, then after a rest period determined by the hold-off circuit consisting of Q22, the flip-flop waits for the next trigger signal.

The B sweep takes place when flip-flop U6 is switched after a delay which is determined by the comparator consisting of Q32-Q34 and the voltage from the potentiometer. The sweep signal is generated by the Miller integrating circuit for B sweep consisting of Q28 and Q29.

The A sweep and B sweep signals are switched by Q67, Q37, Q40, and Q41 of the sweep switching circuit, and are sent to the horizontal final amplifier consisting of Q43-Q52.

## 9. CHANNEL SWITCHING SIGNAL GENERATOR CIRCUIT (X14-1440)

This is a timing generator circuit which is designed to turn each channel ON-OFF for DUAL and TRIPLE operation. U13c and d are CHOP generators for CHOP operation, and U11a and b are frequency divider circuits for DUAL or TRIPLE operation. The clock used for the frequency divider circuits for ALT operation is A blanking, and that used for CHOP operation is the AND signal resulting from A blanking and the output of the CHOP generator.

During V-MODE operation, the channel switching signal becomes the trigger selector signal. In all other cases, only the necessary trigger signal can be selected.

## 10. UNBLANKING SIGNAL GENERATOR CIRCUIT (X74-1440)

The unblanking signal is formed by the switching of A blanking and B blanking in each sweep mode. It is output from the emitter of Q68 superimposed on the intensity voltage.

# ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated. When one mode is calibrated, it must be noted that the other modes may be affected. When calibrating all modes, perform the calibration in the specified sequence.
The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver. If they are not available, contact your dealer.
For optimum adjustment, turn the power on and warm up the scope sufficiently (more than 30 minutes) before starting.
Before calibrating the scope, check the power supply voltage.

## TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

| Test Equipment | Model | Minimum Specification |
|---|---|---|
| Digital Multi-Meter | DL-706 (TRIO) | Impedance: More than 10 MΩ, Measuring range: 0.01 V to 199 V |
| Sine-Wave Generator | 651 B (YHP) | Frequency: 10 Hz to 10 MHz, constant voltage over tuning range |
| Sine-Wave Generator | SG-503 (Tektronix) | Frequency: 50 kHz to 100 MHz, Output impedance: 50 Ω, constant voltage over tuning range. |
| Square-Wave Generator | PG-506 (Tektronix) | Output signal: 1 kHz, Amplitude: 10 mVp-p to 10 Vp-p, Accuracy: within ±1%, Rise time: 35ns or less<br>100 kHz, Rise time: 1 ns or less |
| Q Meter | 4343B (YHP) | — |
| Color Pattern Generator | CG-911A (TRIO) | — |
| Oscilloscope | CS-2100A (TRIO) | Sensitivity: more than 5 mV Frequency response: More than 100 MHz |
| Time-Marker Generator | TG-501 (Tektronix) | Time mark: 0.5 s to 0.1μs repetive waveform |
| High-Voltage Probe | — | Input Impedance: 1000 MΩ |
| Termination | — | Impedance: 50 Ω Accuracy: within 3% |
| Termination | — | 3 watts type impedance: 50 Ω |
| Attenuator | — | −20 dB attenuation (50 Ω) |

**Table 1**

## PREPARATION FOR ADJUSTMENT

**Control Setting**

The control setting listed below must be used for each adjustment procedure.
Exceptions to these settings will be noted as they occur.
After completing a adjustment, return the controls to the following settings.

| NAME OF KNOBS | POSITION |
|---|---|
| INTENSITY | 3 o'clock |
| FOCUS, ASTIG | Optimum position |
| CH1, CH2 ▲▼ POSITION | Mechanical center |
| ◄► POSITION/PULL × 10MAG | Mechanical center, push |
| VARIABLE, A VARIABLE (VOLTS/DIV, SWEEP TIME/DIV) | CAL |
| AC-GND-DC (CH1 and CH2) | DC (GND at no signal) |
| Vertical MODE | CH1 |
| CH2 POLARITY | NORM |
| COUPLING | AC |
| SOURCE | V.MODE |
| TRIG. LEVEL | Mechanical center, push |
| TRIG. MODE | AUTO |
| VOLTS/DIV (CH1 and CH2) | 10 mV/DIV |
| A, B SWEEP TIME/DIV | 1 ms/DIV |
| HOLDOFF | Fully CCW, NORM, Push |
| B MODE | DELAY TIME ZERO |
| HORIZ MODE | A |
| DELAY TIME MULT | Optimum position |

**Table 2**

# ADJUSTMENT

## POWER AND CRT ADJUSMENT

**Reference voltage (+120 V) adjustment**

1. Connect a dc voltmeter to measure the voltage at P9 (Pin no.5) (X73-1660) with respect to the chassis.
2. Adjust VR1 for +120 V±1.2 V reading on the meter.

**Reference voltage check**

1. Connect a dc voltage to measure the voltage at P9 (X73-1660) as shown in table 1.

| Pin no. | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Voltage | 55V±2.5V | −10V± 0.75V | 10V±0.75V | 5V±0.25V |

Table 3

2. Connect a dc voltmeter to measure the voltage at P1 (X81-1600) using a high voltage probe and check the voltage for −1.5 kV±0.07 kV reading on the meter.

**ASTIG and FOCUS adjustment**

1. Select the HORIZ DISPLAY switch to X-Y position and both channel 1 and channel 2 AC-GND-DC switches to GND positions.
2. Pull the PULL ASTIG control and adjust the FOCUS control for the sharpest, roundest spot when centering the ASTIG and FOCUS controls.

**INTENSITY adjustment**

1. Select the HORIZ DISPLAY switch to X-Y position and both channel 1 and channel 2 AC-GND-DC switches to GND positions.
2. Adjust VR1 (X68-1460) so that the trace disappears when the INTENSITY control setting is reduced to 10:00 position.
3. Clockwise rotation should increase brightness of the trace and counterclockwise rotation should decrease brightness of the trace. Fully counterclockwise should disappear the spot.

**TRACE ROTATION adjustment**

1. Set the channel 1 AC-GND-DC switch to GND position.
2. Set the scope controls to display a horizontal trace with no input singal (triggering MODE switch in AUTO position).
3. Use the channel 1 position control as required to position the trace along a horizontal line of the graticule scale.
4. Adjust TRACE ROTATION control so trace is parallel with the reference line on the graticule scale.

## VERTICAL AXIS ADJUSTMENT

**Channel 1 and channel 2 dc balance adjustment**

1. Set the scope controls for a single horizontal trace on channel 1 with the channel 1 AC-GND-DC switch set to GND position.
2. Rotate the channel 1 VOLTS/DIV switch through the 5 mV, 10 mV, 20 mV and 50 mV positions while observing the trace.
3. If the trace moves vertically, adjust VR1 (X73-1650) (CH2; VR10) for minimum or zero vertical movement when performing step 2.
4. Rotate the channel 1 VOLTS/DIV switch through 1 mV, and 2 mV positions while observing the trace.
5. If the trace moves vertically, adjust VR4 (X73-1650) (CH2: VR13) for minimum or zero vertical movement when performing step 4.
6. Rotate the channel 1 VARIABLE control from maximum clockwise to maximum counterclockwise, while observing the trace.
7. If the trace moves vertically, adjust VR3 (X73-1650) (CH2:VR12) for minimum or zero vertical movement when performing step 6.
8. Repeat the entire procedure for channel 2.

**Channel 2 invert position adjustment**

1. Select CH2 mode and set the channel 2 position control to its mechanical center.
2. Pull the channel 2 position control and adjust VR16 (X73-1650) to center the trace vertically.
3. Repeat step 1 and 2 if necessary so trace does not shift when channel 2 position control is alternately pulled and pushed.

**Channel 1 Position adjustment**

1. Select CH1 mode and set the channel 1 position control to its mechanical center.
2. Adjust VR7 (X73-1650) to center the trace vertically.

**Channel 2 Position adjustment**

1. Select CH2 mode and set the channel 2 position control to its mechanical center.
2. Adjust VR17 (X73-1650) to center the trace vertically.

**Channel 3 Position adjustment**

1. Select the vertical MODE switch to TRI and set triggering SOURCE switch to CH3 position.
2. Adjust VR19 (X73-1650) to center the trace vertically.

**Add position adjustment**

1. Set the channel 1 and channel 2 position controls to their mechanical center and AC-GND-DC switches to GND positions and select the vertical MODE switch to ADD position.
2. Adjust VR27 (X73-1650) to center the trace vertically.

# ADJUSTMENT

**100 Hz square wave compensation**

1. Using a square wave generator, apply a 100 Hz square wave signal to oscilloscope input to display a waveform of 6 divisions vertical amplitude.
2. Adjust VR2 (X73-1650) for the best flat-top waveform.
3. Repeat the entire procedure for channel 2.

**Channel 1 gain adjustment**

1. Apply a 50 mV peak to peak, 1 kHz square wave signal to channel 1 input and set the vertical MODE switch to CH1 position.
   Set the scope controls to display a square wave on the CRT screen.
2. Adjust VR8 (X73-1650) for exactly 5 divisions vertical amplitude.
3. Apply a 5 mV peak to peak, 1 kHz square wave signal to channel 1 input and set the vertical MODE switch to CH 1 position.
   Set the scope controls to display a square wave on the CRT screen.
4. Adjust VR30 (X73-1650) for exactly 5 divisions vertical amplitude.

**Channel 2 gain and X gain adjustment**

1. Apply a 50 mV peak to peak, 1 kHz square wave signal to channel 2 input and set the vertical MODE switch to CH2, set the scope controls to display a square wave on the CRT screen.
2. Adjust VR18 (X73-1650) for exactly 5 divisions vertical amplitude.
3. Select the HORIZ MODE switch to X-Y position.
4. Adjust VR21 (X73-1650) for exactly 5 divisions horizontal deflection on the CRT screen.
5. Apply a 5 mV peak to peak, 1 kHz square wave signal to channel 2 input and set the vertical MODE switch to CH2, set the scope controls to display a square wave on the CRT screen.
6. Adjust VR31 (X73-1650) for exactly 5 divisions vertical amplitude.

**Channel 3 gain adjustment**

1. Select the vertical MODE switch to TRI and set triggering SOURCE switch to CH3 position.
2. Apply a 2 V peak to peak, 1 kHz square wave signal to channel 3 input.
3. Adjust VR20 (X73-1650) to display a waveform of 4 divisions vertical amplitude.

## TRIGGERING AND CH3 POSITION ADJUSTMENT

**Triggering level adjustment**

1. Apply a 1 kHz sine wave signal to channel 1 input and set the scope controls to display a waveform of 8 divisions vertical amplitude.
2. Set the triggering MODE switch to FIX position.
3. Adjust VR1 (X74-1440) so the triggering is satisfactory when the amplitude is less than 1 division.

**Triggering level center adjustment**

1. Apply a 1 kHz sine wave signal to channel 1 input and set the scope controls to display a waveform of 8 divisions vertical amplitude.
2. Set the channel 1 position control to its mechanical center.
3. Adjust VR13 (X74-1440) to start the trace from the center of the graticule scale when rotating the triggering LEVEL control to its mechanical center.

**Channel 1 and channel 2 offset adjustment**

1. Set the triggering SOURCE switch to CH1 position.
2. Apply a 1 kHz sine wave signal to channel 1 input and set the scope controls to start a waveform of 6 divisions vertical amplitude from the center graticule scale.
3. Adjust VR22 (X73-1650), if necessary, so the start point of the trace does not shift when switched the COUPLING switch to alternately AC and DC positions.
4. Repeat the entire procedure for channel 2 and channel 3, adjusting VR23, VR24 (X73-1650),respectively.

## VERTICAL AXIS ADJUSTMENT

**Channel 1 and channel 2 waveshape compensation**

1. Apply a 1 kHz square wave signal to channel 1 input and set the scope controls to display a waveform of 6 divisions vertical amplitude.
2. Adjust TC13 (X73-1650) for the best flat-top waveform when setting the channel 1 VOLTS/DIV control to 0.1 V position and TC14 (X73-1650) when channel 1 VOLTS/DIV control to 1 V position.
3. Repeat the entire procedure for channel 2 (X73-1650), adjusting TC14 (X73-1650).

**Channel 3 waveshape compensation**

1. Select the vertical MODE switch to TRI position and triggering SOURCE switch to CH3 position.
2. Apply a 1 kHz square wave signal to channel 3 input to display a waveform of 6 divisions vertical amplitude.
3. Adjust TC5 (X73-1650) for the best flat-top waveform.

# ADJUSTMENT

**Channel 1 and channel 2 input capacity adjustment**

1. Rotate the channel 1 VOLTS/DIV control to 10 mV position and connect a Q meter to channel 1 input to measure the input capacity for 20pF±3pF.

| Adjustment control | | VOLTS/DIV setting |
|---|---|---|
| CH1 | CH2 | |
| TC11 (X73-1650) | TC15 (X73-1650) | 0.1 V/div |
| TC12 (X73-1650) | TC16 (X73-1650) | 1 V/div |

**Table 4**

2. Repeat the entire procedure for channel 1 VOLTS/DIV control to 0.1 V position and 1 V position.
3. Repeat the entire procedure for channel 2 input capacity adjustment.

**Channel 1 overshoot adjustment**

1. Apply a 1 MHz square wave signal to channel 1 input and set the scope controls to display a waveform of 6 divisions vertical amplitude.
2. Preset the adjustment controls as follows;
   TC1~TC9 ; mechanical center
   (X73-1650)
3. Adjust the following controls listed in table below.

| Sequence | Adj. control | Unit no. | Procedure |
|---|---|---|---|
| 1 | TC7 | X73-1650 | Mid frequency range compensation for the best flat-top waveform. |
| 2 | TC2 | X73-1650 | Mid and high frequency ranges compensation for the best flat-top waveform. |
| 3 | TC1 | X73-1650 | High frequency range compensation for the best flat-top waveform. |
| 4 | TC1 | X73-1660 | High frequency range compensation for peak-top waveform. |
| 5 | TC2 | X73-1660 | High frequency range compensation for the best flat-top waveform. |

**Table 5**

**Channel 2 overshoot adjustment**

1. Select the vertical MODE switch to CH2 position.
2. Apply a 1 MHz square wave signal to channel 2 input and set the scope controls to display a waveform of 6 divisions vertical amplitude.
3. Adjust the following controls listed in table below;

| Sequence | Adj. control | Unit no. | Procedure |
|---|---|---|---|
| 1 | TC4 | X73-1650 | Mid frequency range compensation for the best flat-top waveform. |
| 2 | TC3 | X73-1650 | High frequency range compensation for the best flat-top waveform. |

**Table 6**

**Channel 3 overshoot adjustment**

1. Select the vertical MODE switch to ALT and TRI positions and triggering SOURCE switch to CH3 position and SWEEP TIME/DIV control to any position.
2. Apply a 1 MHz square wave signal to channel 3 input and set the scope controls to display a waveform of 6 divisions vertical amplitude.
3. Adjust TC8 (X73-1650) to the best flat-top waveform for high frequency range compensation.
4. Adjust TC6 (X73-1650) to compensate the overshoot for minimum.

## HORIZONTAL AXIS ADJUSTMENT

**1 ms sweep time, A and B sweep start points and MAG gain adjustment**

1. Set the A and B SWEEP TIME/DIV controls to both 1 ms positions, channel 1 VOLTS/DIV control to 1 V position, B MODE switch to DELAY TIME ZERO position and HORIZ MODE switch to ALT position.
2. Apply a 1 ms marker signal to channel 1 input.
3. Adjust VR7 (X74-1440) so the first and 11th time marks of A sweep coincide with graticule scale.
4. Adjust VR10 (X74-1440) so the first and 11th time marks of B sweep coincide with graticule scale.
5. Adjust VR11 (X74-1440) to coincide the start point of A sweep with that of B sweep.
6. PULL the FINE control.
7. Adjust VR8 (X74-1440) so the each time mark of A sweep coincides with graticule scale.

**Mag centering adjustment**

1. Set the B MODE switch to DELAY TIME ZERO, HORIZ MODE switch to ALT, A and B SWEEP TIME/DIV controls to both 1 mV and channel 1 VOLTS/DIV to 1 V positions.

# ADJUSTMENT

2. Apply a 5 ms marker signal to channel 1 input and set the scope controls to center the center of the A and B time marks.
3. Adjust VR9 (X74-1440) to center the center of the A and B time marks when pulled out the FINE control.
4. Repeat step 2 and 3.
5. The center time mark should not shift when setting the ×10 MAG switch to on.

**10 ms sweep time adjustment**

1. Set the B MODE switch to DELAY TIME ZERO, HORIZ MODE switch to ALT, A and B SWEEP TIME/DIV controls to both 10 ms and channel 1 VOLTS/DIV control to 1 V positions.
2. Apply a 10 ms time marker signal to channel 1 input and set the scope controls to center the A and B time marks.
3. Adjust VR2 (X74-1440) to center the center of A time mark when again pushed in horizontal position control.
4. Adjust VR4 (X74-1440) to center the center of B time mark when pushed in horizontal position control.

**10 μs sweep time adjustment**

1. Set the B MODE switch to DELAY TIME ZERO, HORIZ MODE switch to ALT, A and B SWEEP TIME/DIV controls to both 10 μs and channel 1 VOLTS/DIV control to 1 V positions.
2. Apply a 10 μs time marker signal to channel 1 input and set the scope controls to center the center of A and B time marks.
3. Adjust TC1 (X74-1440) to center the center of A time mark when pushed in horizontal position control.
4. Adjust TC4 (X74-1440) to center the center of B time mark when again pushed in horizontal position control.

**Sweep linearity adjustment**

1. Set the B MODE switch to DELAY TIME ZERO, HORIZ MODE switch to ALT, A and B SWEEP TIME/DIV controls to both 0.05 μs and channel 1 VOLTS/DIV control to 1 V positions.
2. Apply a 0.05 μs time marker signal to channel 1 input and the scope controls to center the center of A and B time marks.
3. Adjust TC5 (X74-1440) to center the center of A and B time marks.

**Delay time multiplier adjustment**

1. Set the B MODE switch to STARTS AFTER DELAY, HORIZ MODE switch to ALT, channel 1 AC-GND-DC switch to GND, A SWEEP TIME/DIV control to 0.1 ms and B SWEEP TIME/DIV control to 1 μs positions.
2. Rotate the DELAY TIME MULT control to 0.20 position and set the scope controls to coincide A trace with the left end of the graticule scale, using the horizontal position control.
3. Adjust VR5 (X74-1440) to position B trace (intensified portion) to 0.2 div position.
4. Adjust VR6 (X74-1440) to position B trace to 10 div position (right end of the graticule scale) when rotated the DELAY TIME MULT control to 10.00 position.

**X position adjustment**

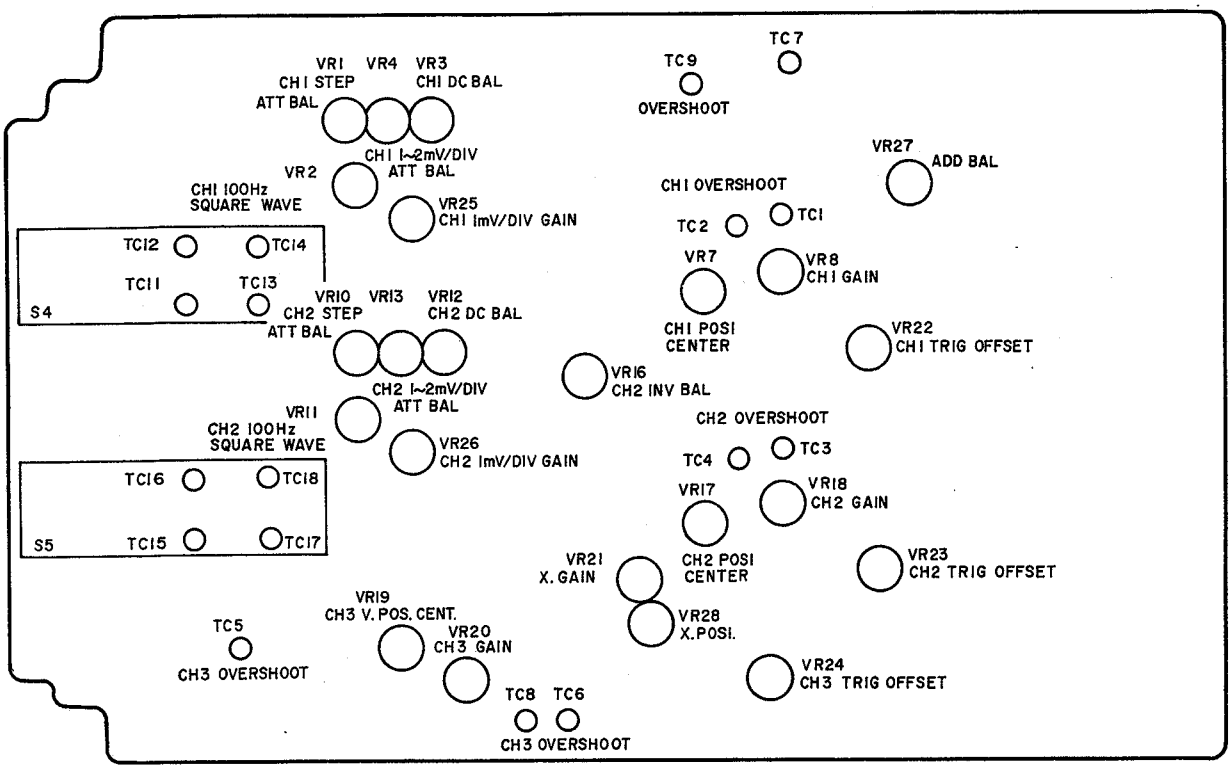
1. Select the vertical MODE switch to CH2 position and channel 2 AC-GND-DC switch to GND position.
2. Set the scope controls to display a trace to the graticule center.
3. Adjust VR28 (X73-1650) to position to trace to horizontal graticule when switched the HORIZ MODE switch to X-Y position.
4. Clockwise rotation of channel 2 position control should move up to 5 divisions upward and counterclockwise rotation should move up to 5 divisions downward.

**Calibration Voltage adjustment.**

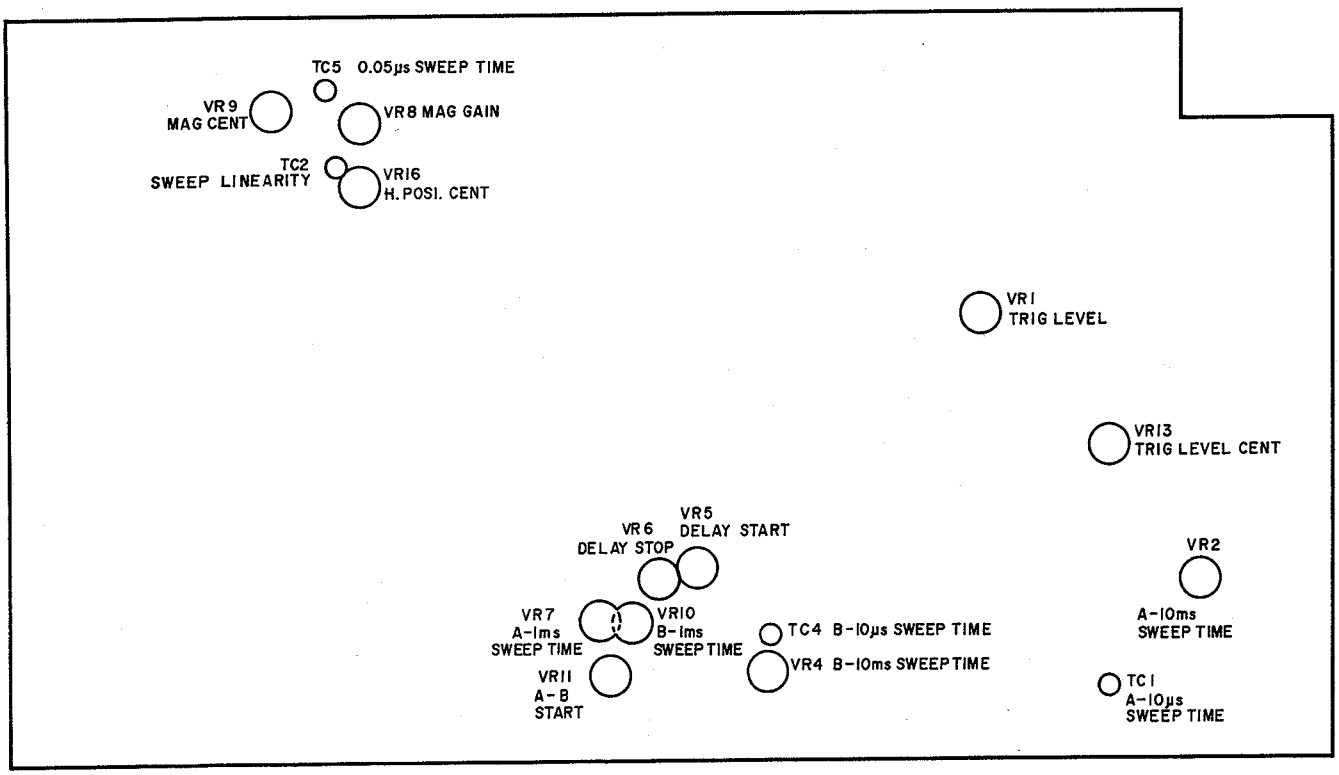
1. Apply a CAL signal to channel 1 input.
2. Adjust VR2 (X73-1660) for 0.5 division vertieal amplitude.

# ADJUSTMENT

## VERTICAL PREAMP UNIT (X73-1650)

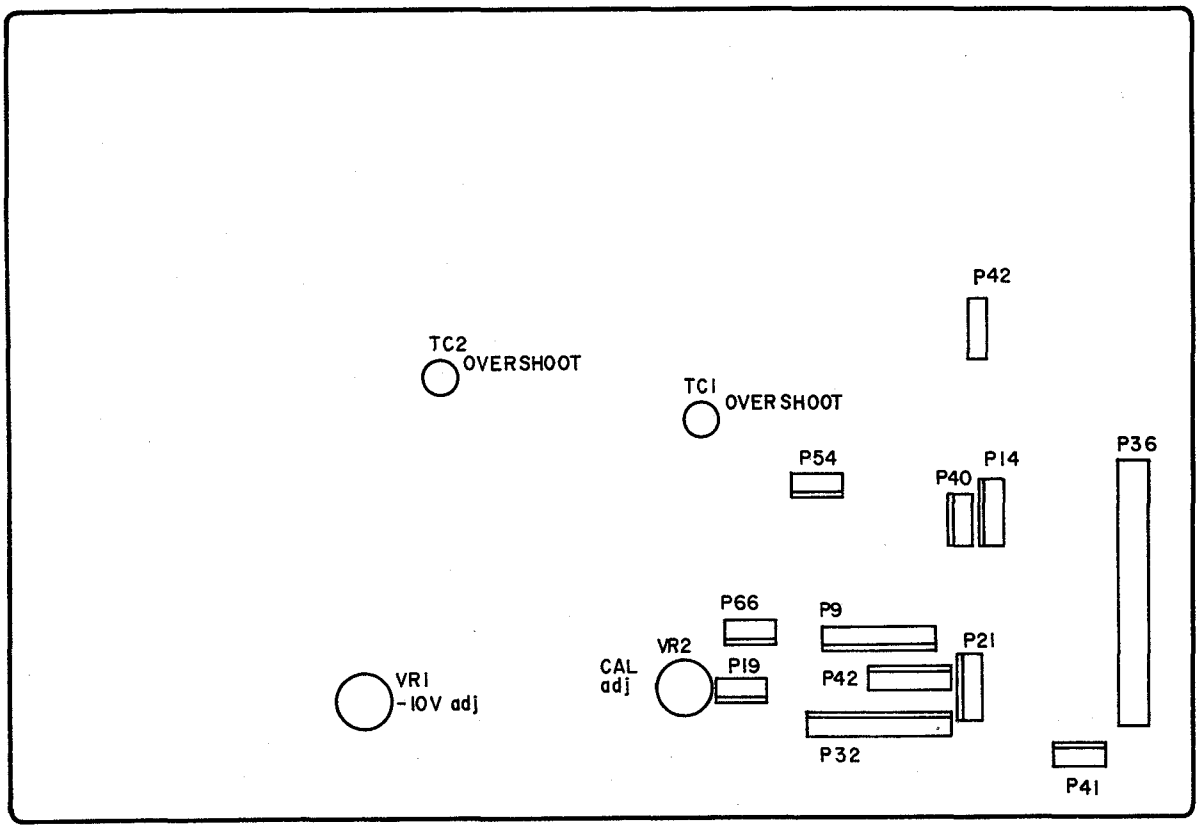



## SWEEP UNIT (X74-1440)

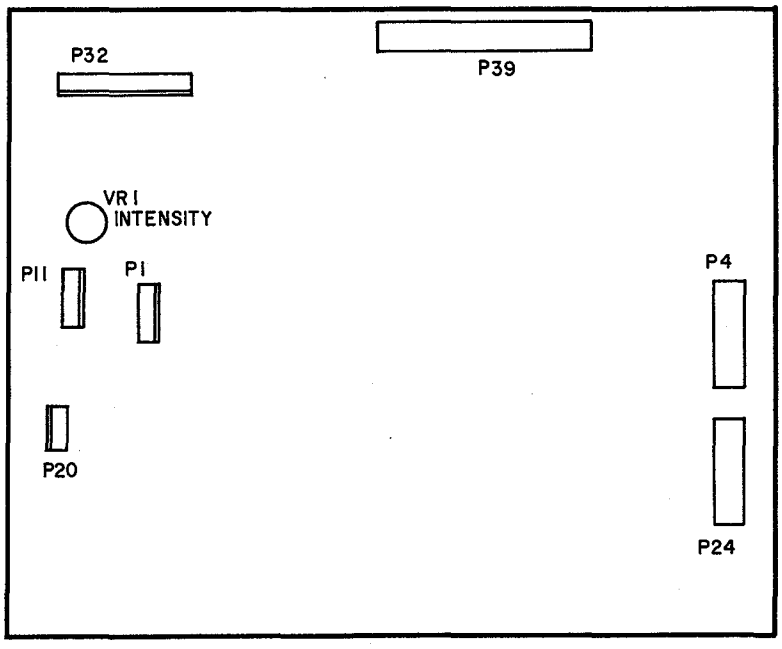


# ADJUSTMENT

## POWER & FINAL AMP UNIT (X73-1660)




## HIGH VOLTAGE UNIT (X68-1460)



# TROUBLESHOOTING

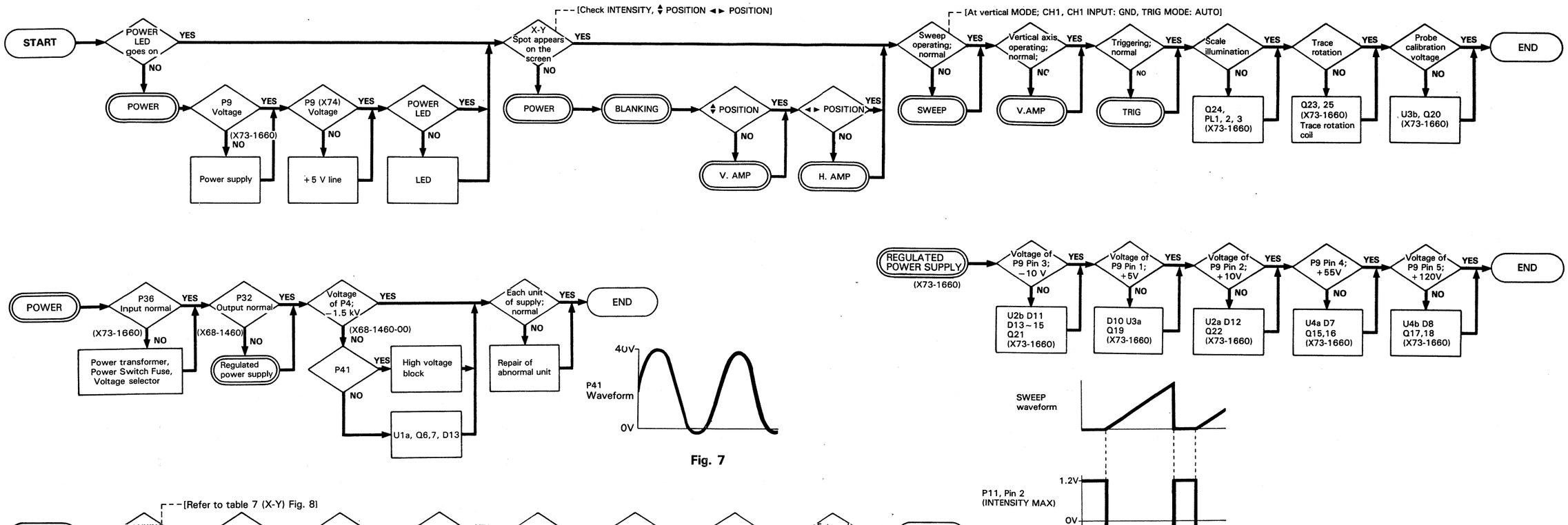
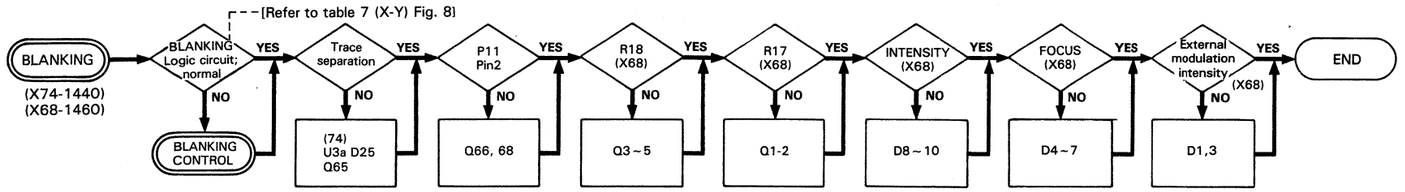
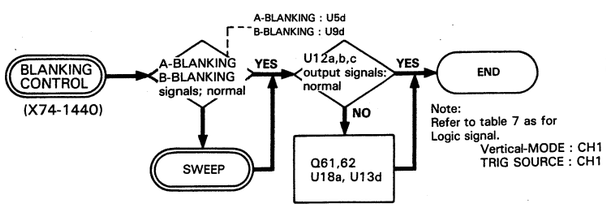



Fig. 7



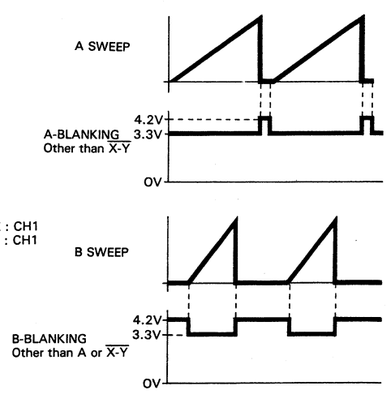



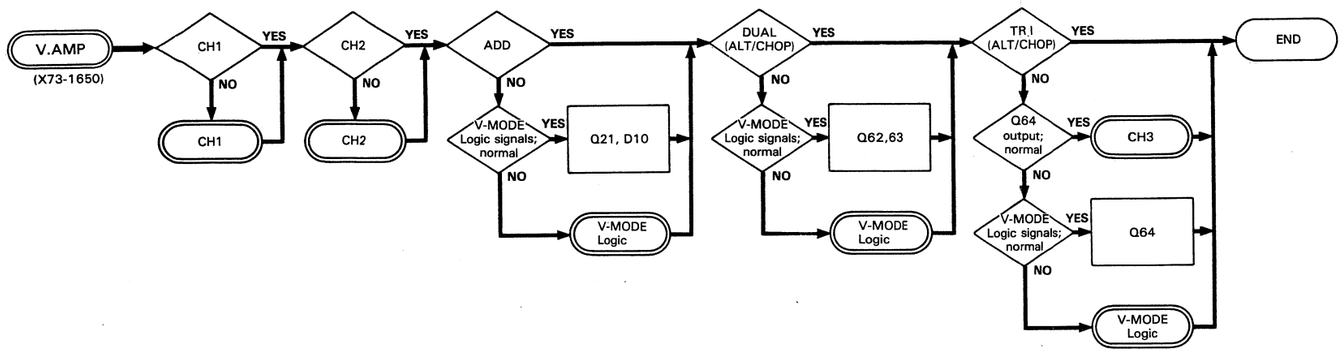

Fig. 9

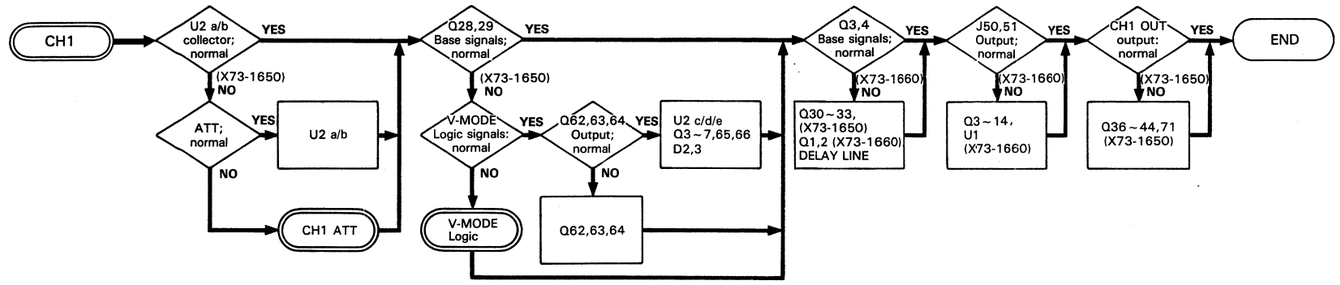
Fig. 8

| | U12 | | | | | | | | | | U18 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pin 8 | Pin 12 | Pin 6 | Pin 9 | Pin 10 | Pin 11 | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 4 | Pin 15 | Pin 1 |
| A | ⎍ | H | H | ⎍ | H | H | L | L | L | H | L | H | ⎍ |
| ALT | ⎍ | ⎍ | ⎍ | ⎍ | ⎍ | H | ⎍ | ⎍ | ⎍ | H | H | H | ⎍ |
| B | H | ⎍ | H | ⎍ | L | H | ⎍ | H | ⎍ | L | H | L | ⎍ |
| X-Y | H | L | H | L | H | H | H | H | H | L | L | L | L |

Table 7

# TROUBLESHOOTING



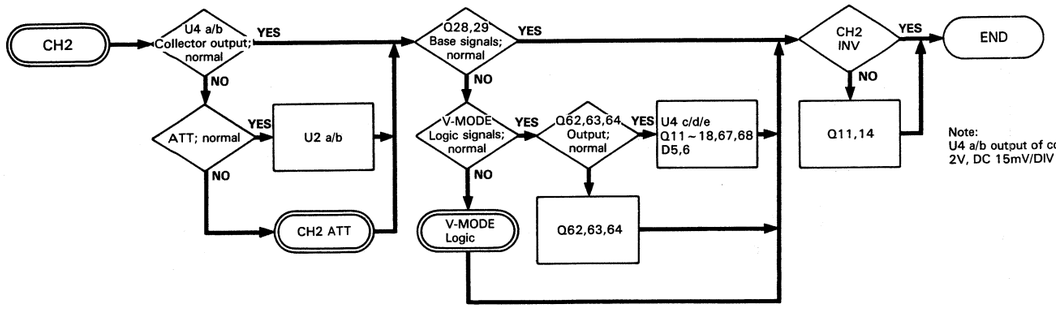




Note:
- U2 a/b collector output voltage
  2V DC, 15mV/DIV (differential output)
- Q28,29 Base signals
  3.6V DC, 100mV/DIV (differential output)

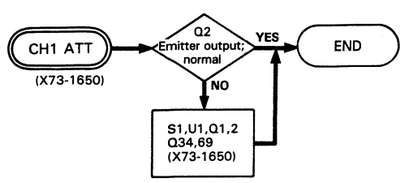
Q3,4 Base signals:
−3.5V DC, 200mV/DIV (differential output)

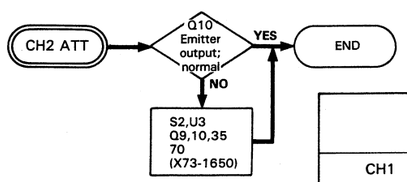
P50,51 output
37.4V DC, 4.6V/DIV (differential output)

CH1 OUT
AC coupling output
50mV/DIV (into 50Ω termination)




Note:
U4 a/b output of collector
2V, DC 15mV/DIV (differential output)



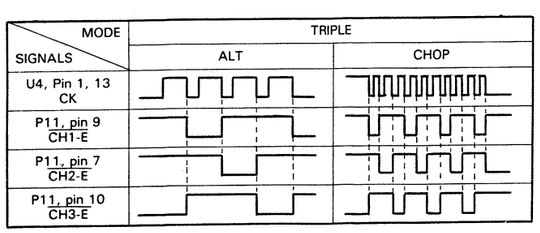
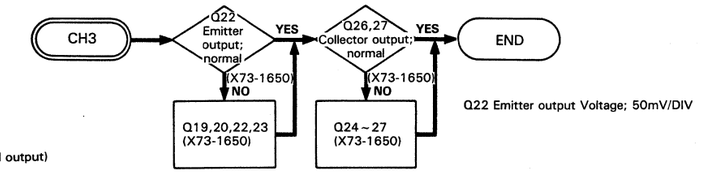
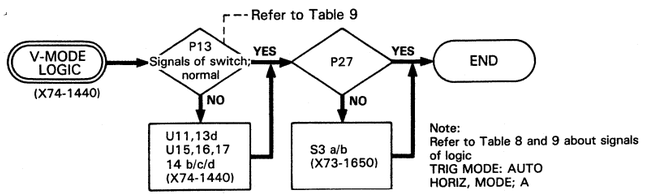




**Table 8**




Q22 Emitter output Voltage; 50mV/DIV

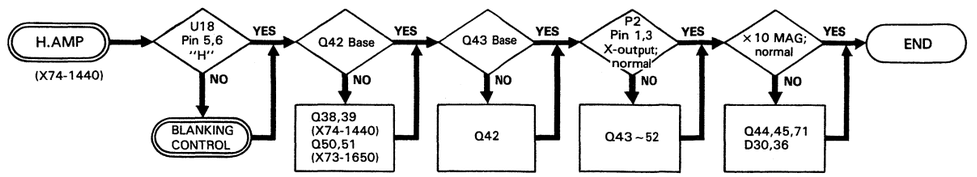



Note:
Refer to Table 8 and 9 about signals of logic
TRIG MODE: AUTO
HORIZ, MODE; A

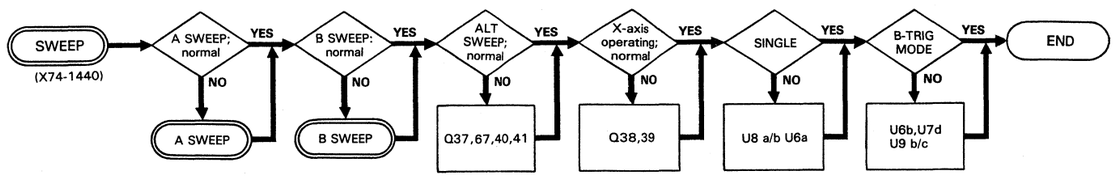
| | | P13 Pin 2 CH1 | P13 Pin 3 CH2 | P13 Pin 4 CH3 | P13 Pin 5 ADD | U18 Pin 10 | U11 Pin 6 | U11 Pin 1 | U15 Pin 3 | U15 Pin 8 | U17 Pin 6 | U17 Pin 3 | U14 Pin 3 | U14 Pin 2 | U17 Pin 4 | P27 Pin 1 | P27 Pin 2 | P27 Pin 3 | P27 Pin 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CH1 | | L | H | H | H | L | H | ⊓⊓ | L | L | H | H | L | H | L | L | H | H | L |
| CH2 | | H | L | H | H | L | L | ⊓⊓ | L | H | L | H | L | H | L | L | H | L | H |
| ADD | | L | L | H | L | L | H | ⊓⊓ | L | L | L | H | – | H | L | – | H | L | L |
| DUAL | ALT | ⊓ | ⊓ | H | H | L | ⊓ | ⊓⊓ | H | H | H | L | L | H | L | L | L | H | H |
| | CHOP | ⊓⊓ | ⊓⊓ | H | H | L | ⊓⊓ | ⊓⊓ | H | H | H | L | H | H | L | H | L | H | H |
| TRI | ALT | ⊓ | ⊓ | ⊓ | H | L | ⊓ | ⊓⊓ | H | H | H | H | L | H | L | L | H | H | H |
| | CHOP | ⊓⊓ | ⊓⊓ | ⊓⊓ | H | L | ⊓⊓ | ⊓⊓ | H | H | H | H | H | H | L | H | H | H | H |
| X-Y | | L | H | H | H | H | H | L | L | L | H | H | L | L | H | L | H | – | – |

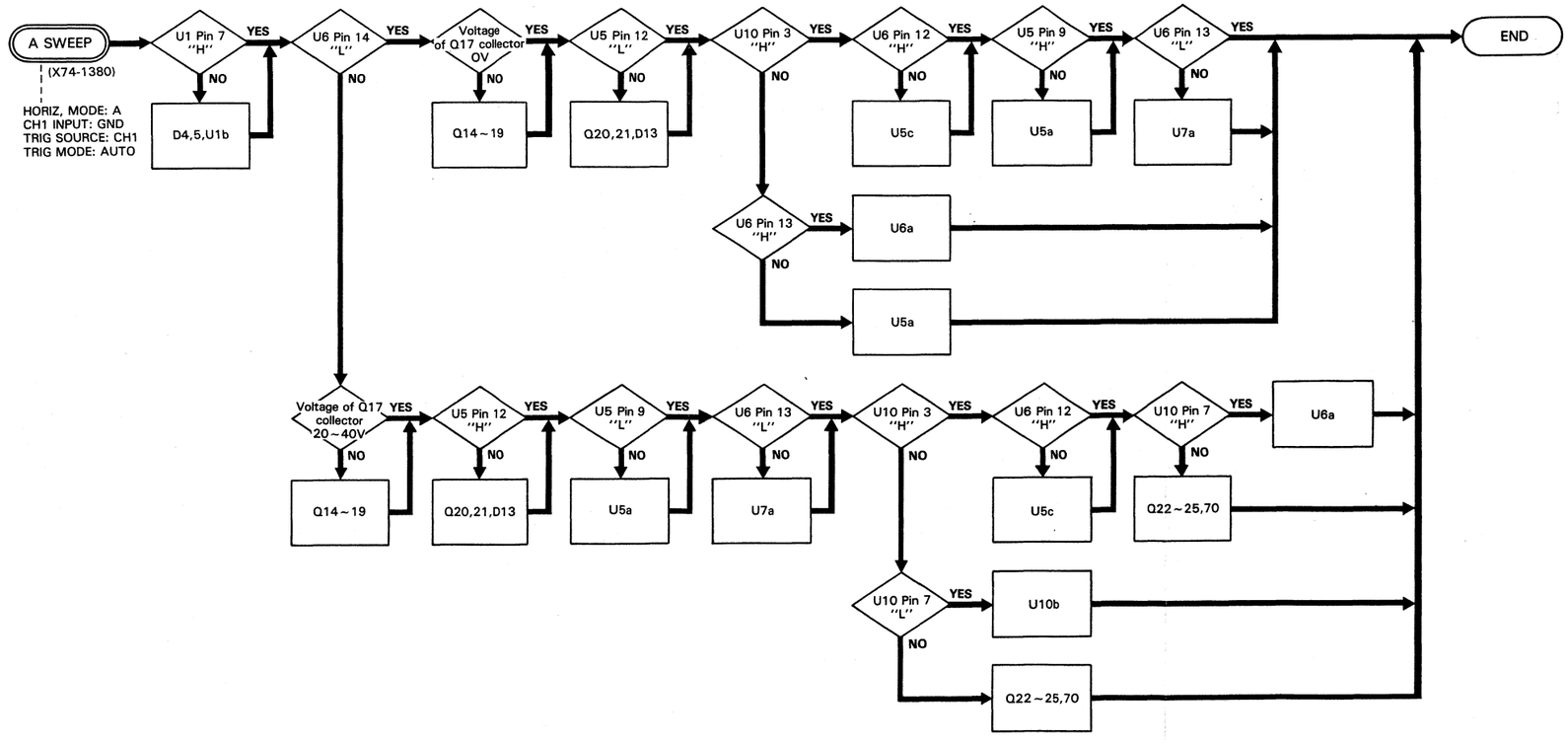
**Table 9**

# TROUBLESHOOTING

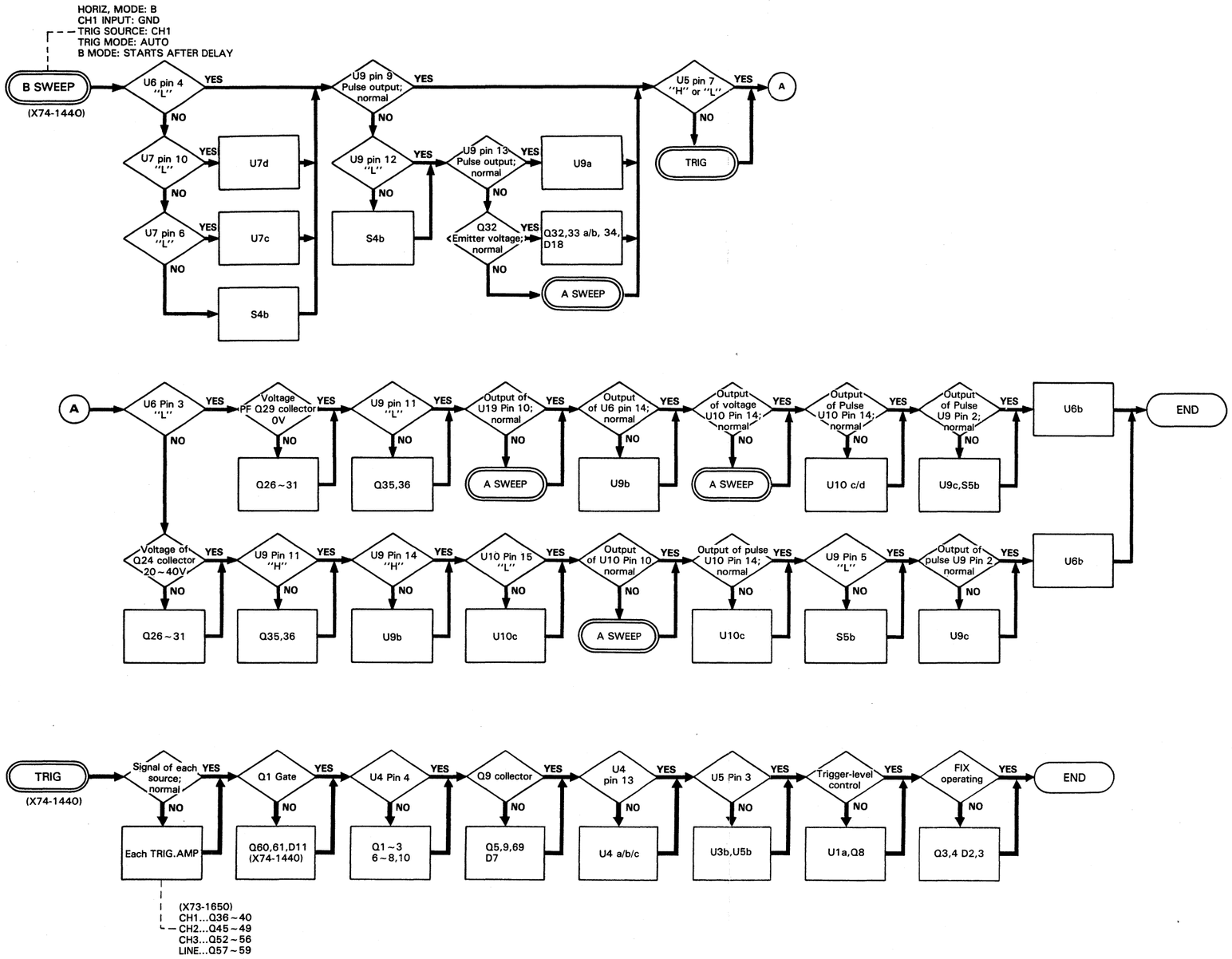



Note:
P2 Pin 1,3; 60V DC, 10V/DIV (differential output)



# TROUBLESHOOTING



# PARTS LIST

## CS-1045 MAIN CHASSIS

### Y70-1550-00

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| 1 | AR4133S | LED (RED) |
| 2 | A01-1155-02 | CASE |
| 3 | A01-1156-12 | CASE |
| 4 | A13-0904-12 | FRAME |
| 5 | A13-0905-12 | FRAME |
| 6 | A13-0906-02 | FRAME |
| 7 | A13-0912-02 | FRAME |
| 8 | A20-2795-11 | PANEL |
| 9 | A21-1084-03 | DECORATIVE PANEL |
| 10 | A22-0852-12 | SUB PANEL |
| 11 | A23-1666-02 | REAR PANEL |
| | A33-0502-05 | REFLECTOR W/LAMP ASS'Y |
| 13 | B07-0714-03 | ESCUTCHEON |
| 14 | B19-0726-04 | FILTER |
| 15 | B20-0924-04 | SCALE |
| 16 | B30-0951-25 | LAMP |
| | B30-0952-05 | LAMP W/B30-0951-05 |
| | B40-2765-04 | NAME PLATE (SERIAL NO) |
| 19 | B40-2862-03 | NAME PLATE |
| 25 | B41-0710-04 | CAUTION LABEL (HIGH VOLTAGE) |
| 28 | B41-0785-03 | CAUTION LABEL |
| | B50-7587-00 | INSTRUCTION MANUAL |
| | C91-1233-05 | CAP. CERAMIC 3P 0.25P 3KV |
| 20 | D19-0908-03 | EXTEN SION SHAFT |
| 21 | E04-0251-05 | BNC RECEPTACLE |
| 22 | E18-0365-05 | INLET SOCKET |
| 23 | E21-0660-04 | TERMINAL(CAL) |
| 24 | E21-0667-05 | TERMINAL |
| | E23-0018-04 | EARTH LUG |
| | E23-0042-04 | ERATH LUG |
| | E23-0513-05 | EARTH LUG |
| | E23-0552-04 | EARTHPLATE |
| 26 | E23-0561-14 | EARTHPLATE |
| 27 | E30-1818-05 | POWER CORD (JIS) |
| | E31-0564-05 | LEAD WIRE WITH CONNECTOR |
| | E31-0717-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2558-15 | LEAD WIRE WITH CONNECTOR |
| | E31-2617-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2618-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2619-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2620-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2621-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2622-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2623-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2624-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2625-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2626-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2627-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2628-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2629-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2630-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2631-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2668-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2678-05 | LEAD WIRE WITH CONNECTOR |
| | E33-4096-00 | WIRE ASSY |
| | F05-1023-05 | FUSE 1A |
| | F07-0908-14 | PROTECTION COVER |
| 29 | F10-1567-14 | SHIELD PLATE |
| 30 | F10-1593-14 | SHIELD PLATE |
| 31 | F11-0996-04 | SHIELD CASE |
| 32 | F11-0998-03 | SHIELD CASE |
| 33 | F20-0658-04 | INSULATOR |
| 34 | G01-0909-04 | COIL SPRING |
| 35 | G02-0606-14 | SPRING FOR HANDLE |
| 36 | G16-0611-04 | REFLECTOR SHEET (L) |
| 37 | G16-0612-04 | REFLECTOR SHEET (R) |
| | H01-5796-04 | CARTON BOX |
| | H10-2828-02 | FOAMED STYRENE PAD |
| | H10-2829-02 | FOAMED STYRENE PAD |
| | H12-0564-04 | PAD |
| | H20-1719-04 | VINYL COVER |
| | H25-0016-00 | BAG |
| 38 | J02-0089-05 | RUBBER LEG |
| 39 | J10-0409-02 | BEZEL |
| | J19-1620-05 | CORD CLAMP |
| 41 | J19-1635-04 | HOLDER FOR LED |
| 42 | J19-1644-13 | CRT HOLDER |
| 43 | J19-1645-14 | BRACKET |
| 44 | J19-1646-04 | BRACKET |
| 45 | J21-2906-05 | GEAR FOR HANDLE |
| 46 | J21-2907-05 | RING FOR HANDLE |
| 47 | J21-4555-04 | BRACKET |
| 48 | J21-4562-03 | BRACKET FOR CRT |
| | J25-3000-05 | P.C.BOARD W/LAMP ASS'Y |
| 49 | J31-0608-05 | COLLAR |
| 50 | J42-0528-05 | BUSHING |
| 51 | J59-0403-05 | NYLON RIVET |
| 52 | J61-0049-05 | WIRE BAND |
| | J61-0408-05 | WIRE WRAPPING BAND |
| | J61-0522-05 | WIRE WRAPPING BAND |
| 55 | K01-0524-05 | HANDLE |
| 56 | K21-0860-13 | KNOB |
| 57 | K21-0885-03 | KNOB |
| 58 | K21-0888-04 | KNOB |
| 59 | K21-0889-04 | KNOB |
| 60 | K23-0803-13 | KNOB |
| 61 | K23-0805-03 | KNOB |
| 62 | K27-0530-14 | KNOB |
| 63 | L01-9526-05 | POWER TRANSFORMER |
| 64 | L39-0524-05 | COIL |
| 65 | L76-0110-05 | DELAY LINE |
| | N08-0611-04 | DRESSED SCREW |
| | N09-0623-04 | SCREW |
| | N09-0705-05 | SCREW, HEX SOCKET FLAT HD |
| | N09-0726-05 | SCREW |
| | N09-0731-05 | SCREW |
| | N09-0739-05 | SCREW |
| | N10-2030-46 | NUT, HEX |
| | N14-0609-04 | NUT |
| | N14-0624-04 | NUT |
| | N14-0625-04 | NUT |
| | N15-1030-41 | WASHER, FLAT FOR M3 |
| | N15-1110-46 | WASHER |
| | N17-1030-46 | TOOTHED LOCK WASHER FOR M3 |
| | N19-0710-05 | WASHER |
| | N19-0725-04 | WASHER |
| | N30-3035-46 | SCREW, PAN HD M 3X35 |
| | N32-3006-41 | SCREW, FLAT HD M 3X6 |
| | N32-3008-41 | SCREW, FLAT HD M 3X8 |
| | N34-3012-41 | SCREW, TRUSS M 3X8 |
| | N88-3008-41 | SCREW, FLAT HD TAP TITE |
| | N89-3008-41 | SCREW, BINDING TAP TITE |
| | N89-3010-41 | SCREW, BINDING TAP TITE |
| | N89-3016-46 | SCREW, BINDING TAP TITE |
| | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| 66 | R03-1509-05 | V.R. 10K |
| 67 | R05-3505-05 | V.R. 20K B |
| 68 | R05-8001-05 | V.R. 3M B |
| 69 | R29-1502-05 | V.R. 100K |
| 70 | W01-0503-04 | CORD WRAP |
| 71 | W02-0423-05 | HIGH VOLTAGE POWER BLOCK |
| 72 | X68-1460-00 | HIGH VOLTAGE UNIT |
| 73 | X73-1650-01 | VERTICAL PREAMP UNIT |
| 74 | X73-1660-01 | VERTICAL OUTPUT AMP UNIT |
| 75 | X74-1440-01 | HOR. SWEEP UNIT |
| 76 | X81-1600-02 | CRT SOCKET UNIT |
| | Y87-1840-00 | PROBE PC-20 |
| 77 | 150RTM31 | CRT |
| | 212-3017-05 | TUBE (PLASTIC) |

## VERTICAL PREAMP UNIT

### X73-1650-01

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| | E31-2170-05 | JUMPING WIRE |
| | E33-4105-00 | WIRE ASSY |
| | F10-1588-04 | SHIELD PLATE |
| | F10-1589-04 | SHIELD PLATE |
| | F10-1590-04 | SHIELD PLATE |
| | F10-1591-04 | SHIELD PLATE |
| | J25-5104-22 | PCB (UNMOUNTED) |
| | J61-0408-05 | WIRE WRAPPING BAND |
| | S02-4504-05 | ROTARY SWITCH |
| | 212-1018-05 | TUBE (PLASTIC) |
| C001 | C91-0502-05 | CAP. METAL FILM 0.01 20% 630V |
| C002 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C003 | C91-0501-05 | CAP. METAL FILM 0.047 10% 630V |
| C004 | CC45CH1H330J | CAP. CERAMIC 33P 5% 50V |
| C005 | CQ92FM1H102K | CAP. MYLAR 1000P 10% 50V |
| C006 | CE04BW1E220M | CAP. ELECTRO 22 20% 25V |
| C007 | NO USE | |
| C008 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C009 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C010 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C011 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C012 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C013 | NO USE | | | | |
| C014 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C015 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C016 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C017 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C018 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C019 | C91-1239-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C020 | C91-1231-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C021 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C022 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C023 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C024 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C025 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C026 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C027 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C028 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C029 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C030 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C031 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C032 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C033 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C034 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C035 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C036 | C91-1239-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C037 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C038 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C039 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C040 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C041 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C042 | NO USE | | | | |
| C043 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C044 | CC45CH1H0R5C | CAP. CERAMIC | 0.5P | 0.25P | 50V |
| C045 | CC45CH1H0R5C | CAP. CERAMIC | 0.5P | 0.25P | 50V |
| C046 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C047 | C91-1227-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C048 | CC45CH1H070D | CAP. CERAMIC | 7P | 0.5P | 50V |
| C049 | CC45CH1H070D | CAP. CERAMIC | 7P | 0.5P | 50V |
| C050 | C91-1231-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C053 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C054 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C055 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C056 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C059 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C060 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C061 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C062 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C063 | CE04W1C101M | CAP. ELECTRO | 100 | 20% | 16V |
| C064 | CE04W1C101M | CAP. ELECTRO | 100 | 20% | 16V |
| C065 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C066 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C067 | CC45CH1H090D | CAP. CERAMIC | 9P | 0.5P | 50V |
| C068 | CC45CH1H090D | CAP. CERAMIC | 9P | 0.5P | 50V |
| C069 | C91-1223-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C070 | C91-1234-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C071 | C91-1238-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C072 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C073 | CQ92M1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C074 | C91-1240-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C075 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C076 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C077 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C078 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C079 | C91-0745-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C080 | C91-0745-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C081 | C91-0745-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C082 | CE04DW0J222M | CAP. ELECTRO | 2200 | 20% | 6.3V |
| C083 | CE04DW0J222M | CAP. ELECTRO | 2200 | 20% | 6.3V |
| C084 | CQ92M1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C085 | CQ92M1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C086 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C087 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C088 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C089 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C090 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C091 | NO USE | | | | |
| C092 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C095 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C100 | C91-1235-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C101 | CE04W1C221M | CAP. ELECTRO | 220 | 20% | 16V |
| C102 | CE04W1C221M | CAP. ELECTRO | 220 | 20% | 16V |
| C103 | CE04W1C221M | CAP. ELECTRO | 220 | 20% | 16V |
| D001 | 1S1544A | DIODE | | | |
| D002 | 1SS132 | DIODE | | | |
| D003 | 1SS132 | DIODE | | | |
| D004 | 1S1544A | DIODE | | | |
| D005 | 1SS132 | DIODE | | | |
| D006 | 1SS132 | DIODE | | | |
| D007 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D008 | 1SS132 | DIODE | | | |
| D009 | 1SS132 | DIODE | | | |
| D010 | MTZ7.5JC | DIODE ZENER | 7.5V | | |
| D011 | 1SS132 | DIODE | | | |
| D012 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D013 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D014 | 1SS132 | DIODE | | | |
| D015 | 1S1544A | DIODE | | | |
| D016 | 1SS132 | DIODE | | | |
| D017 | 1SS132 | DIODE | | | |
| D018 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D019 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D020 | 1SS132 | DIODE | | | |
| D021 | 1SS132 | DIODE | | | |
| J006 | E31-2616-05 | LEAD WIRE WITH CONNECTOR | | | |
| J027 | E31-2672-05 | LEAD WIRE WITH CONNECTOR | | | |
| J028 | E31-2673-05 | LEAD WIRE WITH CONNECTOR | | | |
| J029 | E31-2675-05 | LEAD WIRE WITH CONNECTOR | | | |
| J030 | E31-2676-05 | LEAD WIRE WITH CONNECTOR | | | |
| J038 | E31-2698-05 | LEAD WIRE WITH CONNECTOR | | | |
| J062 | E31-2673-05 | LEAD WIRE WITH CONNECTOR | | | |
| J063 | E31-2675-05 | LEAD WIRE WITH CONNECTOR | | | |
| J064 | E31-2698-05 | LEAD WIRE WITH CONNECTOR | | | |
| J065 | E31-2698-05 | LEAD WIRE WITH CONNECTOR | | | |
| P010 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P011 | NO USE | | | | |
| P012 | E40-0374-05 | PIN CONNECTOR | 3 P | | |
| P013 | E40-0573-05 | PIN CONNECTOR | 5 P | | |
| P016 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P017 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P018 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P028 | E40-0574-05 | PIN CONNECTOR | 5 P | | |
| P029 | E40-0674-05 | PIN CONNECTOR | 6 P | | |
| P030 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P042 | E40-0312-05 | PIN CONNECTOR | 2 P | | |
| P056 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P057 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P058 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P059 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P060 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| Q001 | 2SK304(F) | FET, N-CHANNEL | | | |
| Q002 | 2SC3315(D) | TR. SI, NPN | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SA1005(K) | TR. SI, PNP | | | |
| Q005 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q006 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q007 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q008 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q009 | 2SK304(F) | FET, N-CHANNEL | | | |
| Q010 | 2SC3315(D) | TR. SI, NPN | | | |
| Q011 | 2SA1005(K) | TR. SI, PNP | | | |
| Q012 | 2SA1005(K) | TR. SI, PNP | | | |
| Q013 | 2SA1005(K) | TR. SI, PNP | | | |
| Q014 | 2SA1005(K) | TR. SI, PNP | | | |
| Q015 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q016 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q017 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q018 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q019 | 2SK304(F) | FET, N-CHANNEL | | | |
| Q020 | 2SK304(F) | FET, N-CHANNEL | | | |
| Q021 | 2SA1005(K) | TR. SI, PNP | | | |
| Q022 | 2SC3315(D) | TR. SI, NPN | | | |
| Q023 | 2SC3315(D) | TR. SI, NPN | | | |
| Q024 | 2SC3354(S,T) | TR. SI, NPN | | | |
| Q025 | 2SC3354(S,T) | TR. SI, NPN | | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| Q026 | 2SC3354(S,T) | TR. SI, NPN |
| Q027 | 2SC3354(S,T) | TR. SI, NPN |
| Q028 | 2SC3315(D) | TR. SI, NPN |
| Q029 | 2SC3315(D) | TR. SI, NPN |
| Q030 | 2SA1206 | TR. SI, PNP |
| Q031 | 2SA1206 | TR. SI, PNP |
| Q032 | 2SC2644 | TR. SI, NPN |
| Q033 | 2SC2644 | TR. SI, NPN |
| Q034 | 2SK184(Y) | FET, N-CHANNEL |
| Q035 | 2SK184(Y) | FET, N-CHANNEL |
| Q036 | 2SC3315(D) | TR. SI, NPN |
| Q037 | 2SC3315(D) | TR. SI, NPN |
| Q038 | 2SA1005(K) | TR. SI, PNP |
| Q039 | 2SA1005(K) | TR. SI, PNP |
| Q040 | 2SA1005(K) | TR. SI, PNP |
| Q041 | 2SA1005(K) | TR. SI, PNP |
| Q042 | 2SC3354(S,T) | TR. SI, NPN |
| Q043 | 2SC3354(S,T) | TR. SI, NPN |
| Q044 | 2SC1973 | TR. SI, NPN |
| Q045 | 2SC3315(D) | TR. SI, NPN |
| Q046 | 2SC3315(D) | TR. SI, NPN |
| Q047 | 2SA1005(K) | TR. SI, PNP |
| Q048 | 2SA1005(K) | TR. SI, PNP |
| Q049 | 2SA1005(K) | TR. SI, PNP |
| Q050 | 2SC2785(F) | TR. SI, NPN |
| Q051 | 2SC2785(F) | TR. SI, NPN |
| Q052 | 2SC3315(D) | TR. SI, NPN |
| Q053 | 2SC3315(D) | TR. SI, NPN |
| Q054 | 2SA1005(K) | TR. SI, PNP |
| Q055 | 2SA1005(K) | TR. SI, PNP |
| Q056 | 2SA1005(K) | TR. SI, PNP |
| Q057 | 2SA1175(F) | TR. SI, PNP |
| Q058 | 2SA1175(F) | TR. SI, PNP |
| Q059 | 2SA1005(K) | TR. SI, PNP |
| Q060 | 2SC3354(S,T) | TR. SI, NPN |
| Q061 | 2SC3354(S,T) | TR. SI, NPN |
| Q062 | 2SC2785(F) | TR. SI, NPN |
| Q063 | 2SC2785(F) | TR. SI, NPN |
| Q064 | 2SC2785(F) | TR. SI, NPN |
| Q065 | 2SC3315(D) | TR. SI, NPN |
| Q066 | 2SC3315(D) | TR. SI, NPN |
| Q067 | 2SC3315(D) | TR. SI, NPN |
| Q068 | 2SC3315(D) | TR. SI, NPN |
| Q069 | 2SK304(F) | FET, N-CHANNEL |
| Q070 | 2SK304(F) | FET, N-CHANNEL |
| Q071 | 2SA1005(K) | TR. SI, PNP |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R001 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R002 | RD14BB2C330J | RES. CARBON | 33 | 5% | 1/6W |
| R003 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R004 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R005 | RN14BK2C5003F | RES. METAL FILM | 500K | 1% | 1/6W |
| R006 | RN14BK2C5003F | RES. METAL FILM | 500K | 1% | 1/6W |
| R007 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R008 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R009 | RD14BB2C162J | RES. CARBON | 1.6K | 5% | 1/6W |
| R010 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R011 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R012 | RD14BB2C132J | RES. CARBON | 1.3K | 5% | 1/6W |
| R013 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R014 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R015 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R016 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R017 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R018 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R019 | RD14BB2C181J | RES. CARBON | 180 | 5% | 1/6W |
| R020 | RN14BK2C30R0F | RES. METAL FILM | 30.0 | 1% | 1/6W |
| R021 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R022 | RD14BB2C621J | RES. CARBON | 620 | 5% | 1/6W |
| R023 | RD14BB2C270J | RES. CARBON | 27 | 5% | 1/6W |
| R024 | R92-1162-05 | RES. FIXED | 560 | 3,000PPM | |
| R025 | RN14BK2C1800F | RES. METAL FILM | 180 | 1% | 1/6W |
| R026 | RD14BB2C820J | RES. CARBON | 82 | 5% | 1/6W |
| R027 | NO USE | | | | |
| R028 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R029 | RD14BB2C560J | RES. CARBON | 56 | 5% | 1/6W |
| R030 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R031 | RN14BK2C1801F | RES. METAL FILM | 1.8K | 1% | 1/6W |
| R032 | RN14BK2C1801F | RES. METAL FILM | 1.8K | 1% | 1/6W |
| R033 | RN14BK2C2700F | RES. METAL FILM | 270 | 1% | 1/6W |
| R034 | RN14BK2C12R0F | RES. METAL FILM | 12.0 | 1% | 1/6W |
| R035 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R036 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R037 | RN14BK2C3900F | RES. METAL FILM | 390 | 1% | 1/6W |
| R038 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R039 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R040 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R041 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R042 | RN14BK2C5101F | RES. METAL FILM | 5.1K | 1% | 1/6W |
| R043 | NO USE | | | | |
| R044 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R045 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R046 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R047 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R048 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R049 | RN14BK2C1002F | RES. METAL FILM | 10K | 1% | 1/6W |
| R050 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R051 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R052 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R053 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R054 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R055 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R056 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R057 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R058 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R059 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R060 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R061 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R062 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R063 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R064 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R065 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R066 | RD14BB2C362J | RES. CARBON | 3.6K | 5% | 1/6W |
| R067 | RD14BB2C911J | RES. CARBON | 910 | 5% | 1/6W |
| R068 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R069 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R070 | NO USE | | | | |
| R071 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R072 | RD14BB2C330J | RES. CARBON | 33 | 5% | 1/6W |
| R073 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R074 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R075 | RN14BK2C5003F | RES. METAL FILM | 500K | 1% | 1/6W |
| R076 | RN14BK2C5003F | RES. METAL FILM | 500K | 1% | 1/6W |
| R077 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R078 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R079 | RD14BB2C162J | RES. CARBON | 1.6K | 5% | 1/6W |
| R080 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R081 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R082 | RD14BB2C132J | RES. CARBON | 1.3K | 5% | 1/6W |
| R083 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R084 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R085 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R086 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R087 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R088 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R089 | RD14BB2C181J | RES. CARBON | 180 | 5% | 1/6W |
| R090 | RN14BK2C30R0F | RES. METAL FILM | 30.0 | 1% | 1/6W |
| R091 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R092 | RD14BB2C621J | RES. CARBON | 620 | 5% | 1/6W |
| R093 | RD14BB2C270J | RES. CARBON | 27 | 5% | 1/6W |
| R094 | R92-1162-05 | RES. FIXED | 560 | 3,000PPM | |
| R095 | RN14BK2C1800F | RES. METAL FILM | 180 | 1% | 1/6W |
| R096 | RD14BB2C820J | RES. CARBON | 82 | 5% | 1/6W |
| R097 | NO USE | | | | |
| R098 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R099 | RD14BB2C560J | RES. CARBON | 56 | 5% | 1/6W |
| R100 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R101 | RN14BK2C1801F | RES. METAL FILM | 1.8K | 1% | 1/6W |
| R102 | RN14BK2C1801F | RES. METAL FILM | 1.8K | 1% | 1/6W |
| R103 | RN14BK2C2700F | RES. METAL FILM | 270 | 1% | 1/6W |
| R104 | RN14BK2C12R0F | RES. METAL FILM | 12.0 | 1% | 1/6W |
| R105 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R106 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R107 | RN14BK2C3900F | RES. METAL FILM | 390 | 1% | 1/6W |
| R108 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R109 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R110 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R111 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R112 | RN14BK2C5101F | RES. METAL FILM | 5.1K | 1% | 1/6W |
| R113 | RN14BK2C4700F | RES. METAL FILM | 470 | 1% | 1/6W |
| R114 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R115 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R116 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R117 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R118 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R119 | RN14BK2C1002F | RES. METAL FILM | 10K | 1% | 1/6W |
| R120 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R121 | RN14BK2C1002F | RES. METAL FILM | 10K | 1% | 1/6W |
| R122 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R123 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R124 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R125 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R126 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R127 | RD14BB2C432J | RES. CARBON | 4.3K | 5% | 1/6W |
| R128 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R129 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R130 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R131 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R132 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R133 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R134 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R135 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R136 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R137 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R138 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R139 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R140 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R141 | RD14BB2C362J | RES. CARBON | 3.6K | 5% | 1/6W |
| R142 | RD14BB2C911J | RES. CARBON | 910 | 5% | 1/6W |
| R143 | RN14BK2C4700F | RES. METAL FILM | 470 | 1% | 1/6W |
| R144 | NO USE | | | | |
| R145 | RD14BB2C183J | RES. CARBON | 18K | 5% | 1/6W |
| R146 | RN14BK2C9003F | RES. METAL FILM | 900K | 1% | 1/6W |
| R147 | RN14BK2C1003F | RES. METAL FILM | 100K | 1% | 1/6W |
| R148 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R149 | NO USE | | | | |
| R150 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R151 | NO USE | | | | |
| R152 | RD14BB2C122J | RES. CARBON | 1.2K | 5% | 1/6W |
| R153 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R154 | NO USE | | | | |
| R155 | RD14BB2C162J | RES. CARBON | 1.6K | 5% | 1/6W |
| R156 | RD14BB2C432J | RES. CARBON | 4.3K | 5% | 1/6W |
| R157 | NO USE | | | | |
| R158 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R159 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R160 | R92-1162-05 | RES. FIXED | 560 | 3,000PPM | |
| R163 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R164 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R165 | RD14BB2C362J | RES. CARBON | 3.6K | 5% | 1/6W |
| R166 | RD14BB2C911J | RES. CARBON | 910 | 5% | 1/6W |
| R169 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R170 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R171 | RN14BK2C6980F | RES. METAL FILM | 698 | 1% | 1/6W |
| R172 | RN14BK2C6980F | RES. METAL FILM | 698 | 1% | 1/6W |
| R173 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R174 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R175 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R176 | NO USE | | | | |
| R177 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R178 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R181 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R182 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R183 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R184 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R185 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R186 | RN14BK2C2201F | RES. METAL FILM | 2.2K | 1% | 1/6W |
| R187 | RN14BK2C2201F | RES. METAL FILM | 2.2K | 1% | 1/6W |
| R188 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R189 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R190 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R191 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R192 | RN14BK2C6200F | RES. METAL FILM | 620 | 1% | 1/6W |
| R193 | RN14BK2C6200F | RES. METAL FILM | 620 | 1% | 1/6W |
| R194 | RD14BB2C511J | RES. CARBON | 510 | 5% | 1/6W |
| R195 | RD14BB2C132J | RES. CARBON | 1.3K | 5% | 1/6W |
| R196 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R197 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R198 | RN14BK2C5600F | RES. METAL FILM | 560 | 1% | 1/6W |
| R199 | RN14BK2C1800F | RES. METAL FILM | 180 | 1% | 1/6W |
| R202 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R203 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R206 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R207 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R210 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R211 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R214 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R215 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R216 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R217 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R218 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R219 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R220 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R221 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R222 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R223 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R224 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R225 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R226 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R227 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R228 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R229 | RD14BB2C682J | RES. CARBON | 6.8K | 5% | 1/6W |
| R230 | NO USE | | | | |
| R231 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R232 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R233 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R234 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R235 | RD14BB2C682J | RES. CARBON | 6.8K | 5% | 1/6W |
| R236 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R237 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R238 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R239 | RD14BB2C511J | RES. CARBON | 510 | 5% | 1/6W |
| R240 | RD14BB2C682J | RES. CARBON | 6.8K | 5% | 1/6W |
| R241 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R242 | RD14BB2C511J | RES. CARBON | 510 | 5% | 1/6W |
| R243 | RD14BB2C202J | RES. CARBON | 2K | 5% | 1/6W |
| R244 | RD14BB2C202J | RES. CARBON | 2K | 5% | 1/6W |
| R245 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R246 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R247 | RD14BB2C512J | RES. CARBON | 5.1K | 5% | 1/6W |
| R248 | RD14BB2C242J | RES. CARBON | 2.4K | 5% | 1/6W |
| R249 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R250 | RD14BB2C621J | RES. CARBON | 620 | 5% | 1/6W |
| R251 | RD14BB2C622J | RES. CARBON | 6.2K | 5% | 1/6W |
| R252 | RN14BK2C2490F | RES. METAL FILM | 249 | 1% | 1/6W |
| R253 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R254 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R255 | RD14BB2C561J | RES. CARBON | 560 | 5% | 1/6W |
| R256 | RD14BB2C561J | RES. CARBON | 560 | 5% | 1/6W |
| R257 | RD14BB2C511J | RES. CARBON | 510 | 5% | 1/6W |
| R258 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R259 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R260 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R261 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R262 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R263 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R264 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R265 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R266 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R267 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R268 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R269 | NO USE | | | | |
| R270 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R271 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R272 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R273 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R274 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R275 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R276 | RD14BB2C161J | RES. CARBON | 160 | 5% | 1/6W |
| R279 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R280 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R281 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R282 | NO USE | | | | |
| R283 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R284 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R285 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R286 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R287 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R288 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R289 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R290 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R291 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R292 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R293 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R294 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R295 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R296 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R297 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R298 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R299 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R300 | RD14BB2C333J | RES. CARBON | 33K | 5% | 1/6W |
| R301 | RD14BB2C184J | RES. CARBON | 180K | 5% | 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R302 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R303 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R304 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R305 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R306 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R307 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R308 | RD14BB2C333J | RES. CARBON | 33K | 5% | 1/6W |
| R309 | RD14BB2C184J | RES. CARBON | 180K | 5% | 1/6W |
| R310 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R311 | RD14BB2C822J | RES. CARBON | 8.2K | 5% | 1/6W |
| R312 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R313 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R314 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R315 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| S001 | S32-4007-05 | LEVER SWITCH | | | |
| S002 | S32-4007-05 | LEVER SWITCH | | | |
| S003 | S33-2501-05 | LEVER SWITCH | | | |
| TC001 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC002 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC003 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC004 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC005 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC006 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC007 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC008 | C05-0443-05 | CAP. TRIMMER | 6P | | |
| TC009 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TH001 | SDT1000 | THERMISTOR | | | |
| TH002 | SDT100 | THERMISTOR | | | |
| TH003 | SDT100 | THERMISTOR | | | |
| TH004 | SDT100 | THERMISTOR | | | |
| U001 | LF411CN | IC, DUAL JFET INPUT OP-AMP | | | |
| U002 | CA3127E | IC, TR, ARRY N-P-N | | | |
| U003 | LF411CN | IC, DUAL JFET INPUT OP-AMP | | | |
| U004 | CA3127E | IC, TR, ARRY N-P-N | | | |
| VR001 | R12-4510-05 | RES. SEMI FIXED | 50K B | | |
| VR002 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR003 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR004 | R12-4510-05 | RES. SEMI FIXED | 50K B | | |
| VR007 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR008 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR009 | R01-1513-05 | V.R. | 2K B | | |
| VR010 | R12-4510-05 | RES. SEMI FIXED | 50K B | | |
| VR011 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR012 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR013 | R12-4510-05 | RES. SEMI FIXED | 50K B | | |
| VR016 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR017 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR018 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR019 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR020 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR021 | R12-2517-05 | RES. SEMI FIXED | 10K B | | |
| VR022 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR023 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR024 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR025 | NO USE | | | | |
| VR026 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR027 | R12-2517-05 | RES. SEMI FIXED | 10K B | | |
| VR028 | R01-1513-05 | V.R. | 2K B | | |
| VR029 | R06-1503-05 | V.R. | 2K B X2 | | |
| VR030 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR031 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |

## POWER & FINAL AMP UNIT

### X73-1660-01

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E31-2170-05 | JUMPING WIRE | | | |
| | E33-4097-00 | WIRE ASSY | | | |
| | F01-0813-05 | HEAT SINK | | | |
| | F01-0855-03 | HEAT SINK | | | |
| | J12-0504-05 | SPRING PIPE | | | |
| | J25-5105-13 | PCB (UNMOUNTED) | | | |
| | N09-0623-04 | SCREW | | | |
| | N09-0731-04 | SCREW | | | |
| | N14-0626-04 | NUT | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| C001 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C002 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C003 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C004 | CC45SL1H471J | CAP. CERAMIC | 470P | 5% | 50V |
| C005 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C006 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C007 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C008 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C009 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C010 | CC45CH1H180J | CAP. CERAMIC | 18P | 5% | 50V |
| C011 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C012 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C013 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C014 | CE04W2A4R7M | CAP. ELECTRO | 4.7 | 20% | 100V |
| C015 | CE04W1A470M | CAP. ELECTRO | 47 | 20% | 10V |
| C016 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04W2C010 | CAP. ELECTRO | 1 | | 160V |
| C018 | CE04W2A471M | CAP. ELECTRO | 470 | 20% | 100V |
| C019 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C020 | CE04W1C472M | CAP. ELECTRO | 4700 | 20% | 16V |
| C021 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C022 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C023 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C024 | CE04W1E332M | CAP. ELECTRO | 3300 | 20% | 25V |
| C025 | CE04W1E332M | CAP. ELECTRO | 3300 | 20% | 25V |
| C026 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C027 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C028 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C029 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C030 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C031 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C032 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C033 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C034 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| D001 | 1SS132 | DIODE | | | |
| D002 | 1SS132 | DIODE | | | |
| D003 | S1VB40 | DIODE, BRIDGE | | | |
| D004 | S2VB40F | DIODE, BRIDGE | | | |
| D005 | S4VB40F | DIODE, BRIDGE | | | |
| D006 | S1VB40 | DIODE, BRIDGE | | | |
| D007 | 1SS132 | DIODE | | | |
| D008 | 1SS132 | DIODE | | | |
| D009 | NO USE | | | | |
| D010 | MTZ7.5JA | DIODE, ZENER | 7.1V | | |
| D011 | MTZ11JC | DIODE, ZENER | 11V | | |
| D012 | MTZ11JC | DIODE, ZENER | 11V | | |
| D013 | MTZ3.3JA | DIODE, ZENER | 3.2V | | |
| D014 | MTZ3.3JA | DIODE, ZENER | 3.2V | | |
| D015 | MTZ8.2JA | DIODE, ZENER | 9.6V | | |
| J050 | E31-2613-05 | LEAD WIRE WITH CONNECTOR | | | |
| J051 | E31-2613-05 | LEAD WIRE WITH CONNECTOR | | | |
| L001 | L40-1011-04 | FERRI INDUCTOR | 100UH | | |
| L002 | L40-1011-04 | FERRI INDUCTOR | 100UH | | |
| L003 | L33-0806-05 | CHOKE COIL | | | |
| L004 | L33-0806-05 | CHOKE COIL | | | |
| P009 | E40-0673-05 | PIN CONNECTOR | 6 P | | |
| P012 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P013 | NO USE | | | | |
| P014 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P019 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P020 | NO USE | | | | |
| P021 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P032 | E40-0873-05 | PIN CONNECTOR | 8 P | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| P036 | E40-1004-05 | PIN CONNECTOR 2 P | | | |
| P040 | E40-0273-05 | PIN CONNECTOR 2 P | | | |
| P041 | E40-0273-05 | PIN CONNECTOR 2 P | | | |
| P042 | E40-0311-05 | PIN CONNECTOR 3 P | | | |
| P054 | E40-0273-05 | PIN CONNECTOR 2 P | | | |
| Q001 | 2SA1206 | TR, SI, PNP | | | |
| Q002 | 2SA1206 | TR, SI, PNP | | | |
| Q003 | 2SC2644 | TR. SI, NPN | | | |
| Q004 | 2SC2644 | TR. SI, NPN | | | |
| Q005 | 2SC2644 | TR. SI, NPN | | | |
| Q006 | 2SC2644 | TR. SI, NPN | | | |
| Q007 | 2SC2644 | TR. SI, NPN | | | |
| Q008 | 2SC2644 | TR. SI, NPN | | | |
| Q009 | 2SC2644 | TR. SI, NPN | | | |
| Q010 | 2SC2644 | TR. SI, NPN | | | |
| Q011 | 2SC2644 | TR. SI, NPN | | | |
| Q012 | 2SC2644 | TR. SI, NPN | | | |
| Q013 | 2SC3596(E) | TR. SI, NPN | | | |
| Q014 | 2SC3596(E) | TR. SI, NPN | | | |
| Q015 | 2SC2271(D) | TR. SI, NPN | | | |
| Q016 | 2SD1263A(P,Q,R) | TR, SI, NPN | | | |
| Q017 | 2SC2271(D) | TR. SI, NPN | | | |
| Q018 | 2SD1263A($P_1$,Q,R) | TR, SI, NPN | | | |
| Q019 | 2SB943(P,Q,R) | TR. SI, PNP | | | |
| Q020 | 2SC2785(F) | TR. SI, NPN | | | |
| Q021 | 2SD1268(P,Q,R) | TR, SI, NPN | | | |
| Q022 | 2SB943(P,Q,R) | TR. SI, PNP | | | |
| Q023 | 2SA684(R) | TR. SI, PNP | | | |
| Q024 | 2SD1268(P,Q,R) | TR, SI, NPN | | | |
| Q025 | 2SC1384(R) | TR, SI, NPN | | | |
| Q026 | 2SD1262A(Q) | TR, SI, NPN | | | |
| Q027 | 2SB939A(Q) | TR. SI, PNP | | | |
| R001 | RN14BK2C91R0F | RES. METAL FILM | 91.0 | 1% | 1/6W |
| R002 | RN14BK2C91R0F | RES. METAL FILM | 91.0 | 1% | 1/6W |
| R003 | RD14BB2C561J | RES. CARBON | 560 | 5% | 1/6W |
| R004 | RD14BB2C561J | RES. CARBON | 560 | 5% | 1/6W |
| R005 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R006 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R007 | RN14BK2C5100F | RES. METAL FILM | 510 | 1% | 1/6W |
| R008 | RN14BK2C5100F | RES. METAL FILM | 510 | 1% | 1/6W |
| R009 | RN14BK2C3901F | RES. METAL FILM | 3.9K | 1% | 1/6W |
| R010 | RN14BK2C3901F | RES. METAL FILM | 3.9K | 1% | 1/6W |
| R011 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R012 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R013 | RN14BK2C3600F | RES. METAL FILM | 360 | 1% | 1/6W |
| R014 | RN14BK2C3600F | RES. METAL FILM | 360 | 1% | 1/6W |
| R015 | RN14BK2C1800F | RES. METAL FILM | 180 | 1% | 1/6W |
| R016 | RD14BB2C133J | RES. CARBON | 13K | 5% | 1/6W |
| R017 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R018 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R019 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R020 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R021 | RN14BK2C4300F | RES. METAL FILM | 430 | 1% | 1/6W |
| R022 | RN14BK2C4300F | RES. METAL FILM | 430 | 1% | 1/6W |
| R023 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R024 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R025 | RD14BB2C122J | RES. CARBON | 1.2K | 5% | 1/6W |
| R026 | RD14BB2C122J | RES. CARBON | 1.2K | 5% | 1/6W |
| R027 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R028 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R029 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R030 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R031 | RD14BB2C473J | RES. CARBON | 47K | 5% | 1/6W |
| R032 | RN14BK2C3901F | RES. METAL FILM | 3.9K | 1% | 1/6W |
| R033 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R034 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R035 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R036 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R037 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R038 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R039 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R040 | RN14BK2C6802F | RES. METAL FILM | 68K | 1% | 1/6W |
| R041 | RN14BK2C6802F | RES. METAL FILM | 68K | 1% | 1/6W |
| R042 | RD14BB2C271J | RES. CARBON | 270 | 5% | 1/6W |
| R043 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R044 | RS14AB3Y471J | RES. METAL FILM | 470 | 5% | |
| R045 | RS14AB3Y471J | RES. METAL FILM | 470 | 5% | |
| R046 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R047 | RD14BB2C271J | RES. CARBON | 270 | 5% | 1/6W |
| R048 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R049 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R050 | RN14BK2C1002F | RES. METAL FILM | 10K | 1% | 1/6W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R051 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R052 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R053 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R054 | RD14BB2C163J | RES. CARBON | 16K | 5% | 1/6W |
| R055 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R056 | RN14BK2C1103F | RES. METAL FILM | 110K | 1% | 1/6W |
| R057 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R058 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R059 | RD14BB2C183J | RES. CARBON | 18K | 5% | 1/6W |
| R060 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R061 | RN14BK2C2403F | RES. METAL FILM | 240K | 1% | 1/6W |
| R062 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R063 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R064 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R065 | RD14BB2C221J | RES. CARBON | 220 | 5% | 1/6W |
| R066 | RD14BB2C682J | RES. CARBON | 6.8K | 5% | 1/6W |
| R067 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R068 | RN14BK2C1002F | RES. METAL FILM | 10K | 1% | 1/6W |
| R069 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R070 | RD14BB2C473J | RES. CARBON | 47K | 5% | 1/6W |
| R071 | RS14GB3A273J | RES. METAL FILM | 27K | 5% | 1W |
| R072 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R073 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R074 | RS14GB3A163J | RES. METAL FILM | 16K | 5% | 1W |
| R075 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R076 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R077 | RD14BB2C200J | RES. CARBON | 20 | 5% | 1/6W |
| R078 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R079 | RN14BK2C3301F | RES. METAL FILM | 3.3K | 1% | 1/6W |
| R080 | RN14BK2C9101F | RES. METAL FILM | 9.1K | 1% | 1/6W |
| R081 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R082 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R083 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R084 | RD14BB2C473J | RES. CARBON | 47K | 5% | 1/6W |
| R085 | RN14BK2C4302F | RES. METAL FILM | 43K | 1% | 1/6W |
| R086 | RN14BK2C1003F | RES. METAL FILM | 100K | 1% | 1/6W |
| R087 | RN14BK2C9102F | RES. METAL FILM | 91K | 1% | 1/6W |
| R088 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R089 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R090 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R091 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R092 | RD14BB2C390J | RES. CARBON | 39 | 5% | 1/6W |
| R093 | RD14BB2C390J | RES. CARBON | 39 | 5% | 1/6W |
| R094 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R095 | RD14BB2C221J | RES. CARBON | 220 | 5% | 1/6W |
| R096 | RD14BB2C221J | RES. CARBON | 220 | 5% | 1/6W |
| R097 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R098 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R099 | RD14BB2C561J | RES. CARBON | 560 | 5% | 1/6W |
| R100 | RD14BB2C243J | RES. CARBON | 24K | 5% | 1/6W |
| TC001 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC002 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| U001 | NJM4558D | IC | | | |
| U002 | NJM4558D | IC | | | |
| U003 | NJM4558D | IC | | | |
| U004 | NJM4558D | IC | | | |
| VR001 | R12-1529-05 | RES. SEMI FIXED | 2K B | | |
| VR002 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |

## SWEEP UNIT

### X74-1440-01

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E31-2170-05 | JUMPING WIRE | | | |
| | E33-4091-00 | WIRE ASSY | | | |
| | F01-0820-04 | HEAT SINK | | | |
| | J25-5103-12 | PCB (UNMOUNTED) | | | |
| | N30-3006-46 | SCREW, PAN HD | M 3X6 | | |
| C001 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C002 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C003 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C004 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C005 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C006 | CE04W1C470M | CAP. ELECTRO | 47 | 20% | 16V |
| C007 | CE04W1C470M | CAP. ELECTRO | 47 | 20% | 16V |
| C008 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C009 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C010 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C011 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C012 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C013 | CC45CH1H680J | CAP. CERAMIC | 68P | 5% | 50V |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| C014 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C015 | CE04BW1H010M | CAP. ELECTRO 1 20% 50V |
| C016 | CE04W1C470M | CAP. ELECTRO 47 20% 16V |
| C017 | NO USE | |
| C018 | CC45CH1H100D | CAP. CERAMIC 10P 0.5P 50V |
| C019 | CQ92FM1H222K | CAP. MYLAR 2200P 10% 50V |
| C020 | CC45CH1H100D | CAP. CERAMIC 10P 0.5P 50V |
| C021 | NO USE | |
| C022 | CQ92FM1H104K | CAP. MYLAR 0.1 10% 50V |
| C023 | CQ92FM1H102K | CAP. MYLAR 1000P 10% 50V |
| C024 | CK45B2H472K | CAP. CERAMIC 4700P 10% 500V |
| C025 | C91-0574-05 | CAP. MYLAR 1 5% |
| C026 | C91-0573-05 | CAP. MYLAR 0.01 1% |
| C027 | CQ92FM1H102K | CAP. MYLAR 1000P 10% 50V |
| C028 | CM93BD2A900J | CAP. MICA 90P 5% 100V |
| C029 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C030 | CC45CH1H070D | CAP. CERAMIC 7P 0.5P 50V |
| C031 | CE04W1C470M | CAP. ELECTRO 47 20% 16V |
| C032 | NO USE | |
| C033 | CQ92FM1H222K | CAP. MYLAR 2200P 10% 50V |
| C034 | NO USE | |
| C035 | CQ92FM1H222K | CAP. MYLAR 2200P 10% 50V |
| C036 | CE04W2C4R7 | CAP. ELECTRO 4.7 160V |
| C037 | CQ92FM1H473K | CAP. MYLAR 0.047 10% 50V |
| C038 | C91-0574-05 | CAP. MYLAR 1 5% |
| C039 | C91-0573-05 | CAP. MYLAR 0.01 1% |
| C040 | CQ92FM1H102K | CAP. MYLAR 1000P 10% 50V |
| C041 | CM93BD2A900J | CAP. MICA 90P 5% 100V |
| C042 | CQ92FM1H102K | CAP. MYLAR 1000P 10% 50V |
| C043 | CC45SL1H221J | CAP. CERAMIC 220P 5% 50V |
| C044 | CC45CH1H470J | CAP. CERAMIC 47P 5% 50V |
| C045 | CC45CH1H470J | CAP. CERAMIC 47P 5% 50V |
| C046 | CC45CH1H020C | CAP. CERAMIC 2P 0.25P 50V |
| C047 | CC45CH1H020C | CAP. CERAMIC 2P 0.25P 50V |
| C048 | NO USE | |
| C049 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C050 | NO USE | |
| C051 | CC45CH1H680J | CAP. CERAMIC 68P 5% 50V |
| C052 | NO USE | |
| C053 | CC45CH1H150J | CAP. CERAMIC 15P 5% 50V |
| C054 | CK45B2H472K | CAP. CERAMIC 4700P 10% 500V |
| C055 | CK45B2H472K | CAP. CERAMIC 4700P 10% 500V |
| C056 | CE04BW1H010M | CAP. ELECTRO 1 20% 50V |
| C057 | C90-0298-05 | CAP. CERAMIC 0.1 20% 12V |
| C058 | C90-0298-05 | CAP. CERAMIC 0.1 20% 12V |
| C059 | NO USE | |
| C060 | CE04BW1H010M | CAP. ELECTRO 1 20% 50V |
| C063 | CC45CH1H070D | CAP. CERAMIC 7P 0.5P 50V |
| C064 | CC45CH1H101J | CAP. CERAMIC 100P 5% 50V |
| C065 | CC45CH1H101J | CAP. CERAMIC 100P 5% 50V |
| C066 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C067 | CC45CH1H040C | CAP. CERAMIC 4P 0.25P 50V |
| C068 | CC45CH1H040C | CAP. CERAMIC 4P 0.25P 50V |
| C069 | CC45CH1H470J | CAP. CERAMIC 47P 5% 50V |
| C070 | CQ92FM1H104K | CAP. MYLAR 0.1 10% 50V |
| C071 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C072 | CC45CH1H470J | CAP. CERAMIC 47P 5% 50V |
| C073 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C074 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C075 | CC45CH1H150J | CAP. CERAMIC 15P 5% 50V |
| C076 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C077 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C078 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C079 | CE04W2A3R3M | CAP. ELECTRO 3.3 20% 100V |
| C080 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C081 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C082 | NO USE | |
| C083 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C084 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C085 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C086 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C087 | NO USE | |
| C088 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C089 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C090 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C091 | CE04BW1H010M | CAP. ELECTRO 1 20% 50V |
| C092 | CC45CH1H101J | CAP. CERAMIC 100P 5% 50V |
| C093 | CC45CH1H101J | CAP. CERAMIC 100P 5% 50V |
| C094 | CC45SL1H221J | CAP. CERAMIC 220P 5% 50V |
| C095 | CE04W2C3R3 | CAP. ELECTRO 3.3 160V |
| C096 | CK45B2H472K | CAP. CERAMIC 4700P 10% 500V |
| C097 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C098 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C099 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C100 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| C105 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C106 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C107 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C110 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C111 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C114 | CC45CH1H470J | CAP. CERAMIC 47P 5% 50V |
| C117 | C91-0769-05 | CAP. CERAMIC 3P 0.25P 3KV |
| C118 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C119 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C120 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C121 | CE04W1C330M | CAP. ELECTRO 33 20% 16V |
| C122 | CQ92FM1H223K | CAP. MYLAR 0.022 10% 50V |
| C123 | NO USE | |
| C124 | CC45CH1H030C | CAP. CERAMIC 3P 0.25P 50V |
| C125 | CQ92FM1H104K | CAP. MYLAR 0.1 10% 50V |
| C126 | CQ92FM1H104K | CAP. MYLAR 0.1 10% 50V |
| C127 | CK45F1H103Z | CAP. CERAMIC 0.01 50V |
| C128 | CK45F1H103Z | CAP. CERAMIC 0.01 50V |
| D001 | 1SS132 | DIODE |
| D002 | 1SS132 | DIODE |
| D003 | 1SS132 | DIODE |
| D004 | 1SS132 | DIODE |
| D005 | 1SS132 | DIODE |
| D006 | 1SS132 | DIODE |
| D007 | 1SS132 | DIODE |
| D008 | 1SS132 | DIODE |
| D009 | 1SS132 | DIODE |
| D010 | 1SS132 | DIODE |
| D011 | 1SS132 | DIODE |
| D012 | 1SS132 | DIODE |
| D013 | 1SS132 | DIODE |
| D014 | 1SS132 | DIODE |
| D015 | 1SS132 | DIODE |
| D016 | 1SS132 | DIODE |
| D017 | NO USE | |
| D018 | 1SS132 | DIODE |
| D021 | 1SS132 | DIODE |
| D022 | 1SS132 | DIODE |
| D023 | 1SS132 | DIODE |
| D024 | 1SS132 | DIODE |
| D025 | MTZ7.5JA | DIODE, ZENER 9.6V |
| D026 | 1SS132 | DIODE |
| D027 | 1SS132 | DIODE |
| D028 | 1SS132 | DIODE |
| D029 | 1SS132 | DIODE |
| D030 | 1SS132 | DIODE |
| D031 | 1SS132 | DIODE |
| D032 | 1SS83 | DIODE |
| D033 | 1SS83 | DIODE |
| D034 | 1SS83 | DIODE |
| D035 | 1SS132 | DIODE |
| D036 | MTZ7.5JA | DIODE, ZENER 9.6V |
| J005 | E31-2615-05 | LEAD WIRE WITH CONNECTOR |
| J025 | E31-2669-05 | LEAD WIRE WITH CONNECTOR |
| J026 | E31-2671-05 | LEAD WIRE WITH CONNECTOR |
| J031 | E31-2677-05 | LEAD WIRE WITH CONNECTOR |
| J034 | E31-2699-05 | LEAD WIRE WITH CONNECTOR |
| J043 | E31-2707-05 | LEAD WIRE WITH CONNECTOR |
| L001 | L40-6801-03 | FERRI INDUCTOR 68UH |
| L002 | L40-4701-03 | FERRI INDUCTOR 47UH |
| L003 | L40-4701-03 | FERRI INDUCTOR 47UH |
| P002 | E40-0374-05 | PIN CONNECTOR 3 P |
| P007 | E40-0273-05 | PIN CONNECTOR 2 P |
| P008 | E40-0273-05 | PIN CONNECTOR 2 P |
| P009 | E40-0874-05 | PIN CONNECTOR 8P |
| P010 | E40-0273-05 | PIN CONNECTOR 2 P |
| P011 | E40-0373-05 | PIN CONNECTOR 3 P |
| P012 | NO USE | |
| P013 | E40-1373-05 | PIN CONNECTOR 13 P |
| P014 | NO USE | |
| P015 | E40-0373-05 | PIN CONNECTOR 3 P |
| P018 | E40-0273-05 | PIN CONNECTOR 2 P |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| P025 | E40-0573-05 | PIN CONNECTOR 5 P |
| P026 | E40-0873-05 | PIN CONNECTOR 8 P |
| P027 | E40-0573-05 | PIN CONNECTOR 5 P |
| P031 | E40-0573-05 | PIN CONNECTOR 5 P |
| Q001 | 2SK241(Y) | FET, N-CHANNEL |
| Q002 | 2SK241(Y) | FET, N-CHANNEL |
| Q003 | 2SC2786(K) | TR. SI, NPN |
| Q004 | 2SA1005(K) | TR. SI, PNP |
| Q005 | 2SC2785(F) | TR. SI, NPN |
| Q006 | 2SC1215(S,T) | TR, SI, NPN |
| Q007 | 2SC1215(S,T) | TR, SI, NPN |
| Q008 | 2SC2785(F) | TR. SI, NPN |
| Q009 | 2SC2785(F) | TR. SI, NPN |
| Q010 | 2SC2786(K) | TR. SI, NPN |
| Q013 | 2SA1175(F) | TR. SI, PNP |
| Q014 | 2SA1005(K) | TR. SI, PNP |
| Q015 | 2SA1175(F) | TR. SI, PNP |
| Q016 | 2SK117(Y) | FET. P-CHANNEL |
| Q017 | 2SC2785(F) | TR. SI, NPN |
| Q018 | 2SA1175(F) | TR. SI, PNP |
| Q019 | 2SK117(GR) | FET. N-CHANNEL |
| Q020 | 2SC2785(F) | TR. SI, NPN |
| Q021 | 2SC2785(F) | TR. SI, NPN |
| Q022 | 2SA1175(F) | TR. SI, PNP |
| Q023 | 2SC2785(F) | TR. SI, NPN |
| Q024 | 2SA1175(F) | TR. SI, PNP |
| Q025 | 2SA1175(F) | TR. SI, PNP |
| Q026 | 2SA1005(K) | TR. SI, PNP |
| Q027 | 2SA1175(F) | TR. SI, PNP |
| Q028 | 2SK117(Y) | FET. P-CHANNEL |
| Q029 | 2SC2785(F) | TR. SI, NPN |
| Q030 | 2SA1175(F) | TR. SI, PNP |
| Q031 | 2SK117(GR) | FET. N-CHANNEL |
| Q032 | 2SA1175(F) | TR. SI, PNP |
| Q033 | 2SC3066(F,G) | TR. SI, NPN |
| Q034 | 2SC2785(F) | TR. SI, NPN |
| Q035 | 2SC2785(F) | TR. SI, NPN |
| Q036 | 2SC2785(F) | TR. SI, NPN |
| Q037 | 2SC2786(K) | TR. SI, NPN |
| Q038 | 2SC2786(K) | TR. SI, NPN |
| Q039 | 2SC2785(F) | TR. SI, NPN |
| Q040 | 2SC2785(F) | TR. SI, NPN |
| Q041 | 2SC2786(K) | TR. SI, NPN |
| Q042 | 2SC2785(F) | TR. SI, NPN |
| Q043 | 2SA1005(K) | TR. SI, PNP |
| Q044 | 2SK336 | FET. N-CHANNEL |
| Q045 | 2SK336 | FET. N-CHANNEL |
| Q046 | 2SA1005(K) | TR. SI, PNP |
| Q047 | 2SC2785(F) | TR. SI, NPN |
| Q048 | 2SC2785(F) | TR. SI, NPN |
| Q049 | 2SC2912(S) | TR. SI, NPN |
| Q050 | 2SC2912(S) | TR. SI, NPN |
| Q051 | 2SA1210(S) | TR. SI, PNP |
| Q052 | 2SA1210(S) | TR. SI, PNP |
| Q059 | 2SC2785(F) | TR. SI, NPN |
| Q060 | 2SA1175(F) | TR. SI, PNP |
| Q061 | 2SA1005(K) | TR. SI, PNP |
| Q062 | 2SC2786(K) | TR. SI, NPN |
| Q063 | 2SA1005(K) | TR. SI, PNP |
| Q064 | 2SC2785(F) | TR. SI, NPN |
| Q065 | 2SA1175(F) | TR. SI, PNP |
| Q066 | 2SA1005(K) | TR. SI, PNP |
| Q067 | 2SC2785(F) | TR. SI, NPN |
| Q068 | 2SA1175(F) | TR. SI, PNP |
| Q069 | 2SC2785(F) | TR. SI, NPN |
| Q070 | 2SC2785(F) | TR. SI, NPN |
| Q071 | 2SC2785(F) | TR. SI, NPN |
| R001 | RD14BB2C104J | RES. CARBON 100K 5% 1/6W |
| R002 | RD14BB2C914J | RES. CARBON 910K 5% 1/6W |
| R003 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R004 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R005 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R006 | RD14BB2C162J | RES. CARBON 1.6K 5% 1/6W |
| R007 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R008 | RD14BB2C332J | RES. CARBON 3.3K 5% 1/6W |
| R009 | RD14BB2C331J | RES. CARBON 330 5% 1/6W |
| R010 | RD14BB2C911J | RES. CARBON 910 5% 1/6W |
| R011 | RN14BK2C9103F | RES. METAL FILM 910K 1% 1/6W |
| R012 | RN14BK2C9103F | RES. METAL FILM 910K 1% 1/6W |
| R013 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R014 | RD14BB2C152J | RES. CARBON 1.5K 5% 1/6W |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| R015 | RD14BB2C105J | RES. CARBON 1M 5% 1/6W |
| R016 | RD14BB2C473J | RES. CARBON 47K 5% 1/6W |
| R017 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R018 | RD14BB2C332J | RES. CARBON 3.3K 5% 1/6W |
| R019 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R020 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R021 | NO USE | |
| R022 | RD14BB2C912J | RES. CARBON 9.1K 5% 1/6W |
| R023 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R024 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R025 | RD14BB2C132J | RES. CARBON 1.3K 5% 1/6W |
| R026 | RD14BB2C132J | RES. CARBON 1.3K 5% 1/6W |
| R027 | RD14BB2C680J | RES. CARBON 68 5% 1/6W |
| R028 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R029 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R030 | NO USE | |
| R031 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R032 | RD14BB2C432J | RES. CARBON 4.3K 5% 1/6W |
| R033 | RD14BB2C511J | RES. CARBON 510 5% 1/6W |
| R036 | RD14BB2C431J | RES. CARBON 430 5% 1/6W |
| R037 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R038 | RD14BB2C223J | RES. CARBON 22K 5% 1/6W |
| R039 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R040 | NO USE | |
| R041 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R042 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R043 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R044 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R045 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R046 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R047 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R048 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R049 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R050 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R051 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R052 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R053 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R054 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R055 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R056 | RD14BB2C154J | RES. CARBON 150K 5% 1/6W |
| R057 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R058 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R059 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R060 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R061 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R062 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R063 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R064 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R065 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R066 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R067 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R068 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R069 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R070 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R071 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R072 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R073 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R074 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R075 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R076 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R077 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R078 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R079 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R080 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R081 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R082 | RD14BB2C221J | RES. CARBON 220 5% 1/6W |
| R083 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R084 | RD14BB2C222J | RES. CARBON 2.2K 5% 1/6W |
| R085 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R086 | RD14BB2C222J | RES. CARBON 2.2K 5% 1/6W |
| R087 | RD14BB2C222J | RES. CARBON 2.2K 5% 1/6W |
| R088 | RD14BB2C222J | RES. CARBON 2.2K 5% 1/6W |
| R089 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R090 | RD14BB2C111J | RES. CARBON 110 5% 1/6W |
| R091 | RD14BB2C222J | RES. CARBON 2.2K 5% 1/6W |
| R092 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R093 | RD14BB2C331J | RES. CARBON 330 5% 1/6W |
| R094 | RD14BB2C153J | RES. CARBON 15K 5% 1/6W |
| R095 | RS14GB3A472J | RES. METAL FILM 4.7K 5% 1W |
| R096 | RD14BB2C153J | RES. CARBON 15K 5% 1/6W |
| R097 | RD14BB2C821J | RES. CARBON 820 5% 1/6W |
| R098 | RD14BB2C272J | RES. CARBON 2.7K 5% 1/6W |
| R099 | RD14BB2C153J | RES. CARBON 15K 5% 1/6W |
| R100 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R101 | RD14BB2C911J | RES. CARBON 910 5% 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R102 | RN14BK2H3004F | RES. METAL FILM | 3M | 1% | 1/2W |
| R103 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R104 | RN14BK2E5003F | RES. METAL FILM | 500K | 1% | 1/4W |
| R105 | RN14BK2E3003F | RES. METAL FILM | 300K | 1% | 1/4W |
| R106 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R107 | RN14BK2E4992F | RES. METAL FILM | 49.9K | 1% | 1/4W |
| R108 | R92-1066-05 | RES. FIXED | 29.8K | 1% | 1/4W |
| R109 | R92-1065-05 | RES. FIXED | 9.92K | 1% | 1/4W |
| R110 | R92-1064-05 | RES. FIXED | 4.95K | 1% | 1/4W |
| R111 | R92-1064-05 | RES. FIXED | 4.95K | 1% | 1/4W |
| R112 | RN14BK2C2202F | RES. METAL FILM | 22K | 1% | 1/6W |
| R113 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R114 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R115 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R116 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R117 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R118 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R119 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R120 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R121 | RD14BB2C221J | RES. CARBON | 220 | 5% | 1/6W |
| R122 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R123 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R124 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R125 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R126 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R127 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R128 | RS14GB3A472J | RES. METAL FILM | 4.7K | 5% | 1W |
| R129 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R130 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R131 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R132 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R133 | RN14BK2H3004F | RES. METAL FILM | 3M | 1% | 1/2W |
| R134 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R135 | RN14BK2E5003F | RES. METAL FILM | 500K | 1% | 1/4W |
| R136 | RN14BK2E3003F | RES. METAL FILM | 300K | 1% | 1/4W |
| R137 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R138 | RN14BK2E4992F | RES. METAL FILM | 49.9K | 1% | 1/4W |
| R139 | R92-1066-05 | RES. FIXED | 29.8K | 1% | 1/4W |
| R140 | R92-1065-05 | RES. FIXED | 9.92K | 1% | 1/4W |
| R141 | R92-1064-05 | RES. FIXED | 4.95K | 1% | 1/4W |
| R142 | R92-1064-05 | RES. FIXED | 4.95K | 1% | 1/4W |
| R143 | RN14BK2C2202F | RES. METAL FILM | 22K | 1% | 1/6W |
| R144 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R145 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R146 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R147 | RD14BB2C113J | RES. CARBON | 11K | 5% | 1/6W |
| R148 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R149 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R150 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R151 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R152 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R153 | RD14BB2C361J | RES. CARBON | 360 | 5% | 1/6W |
| R154 | RD14BB2C822J | RES. CARBON | 8.2K | 5% | 1/6W |
| R155 | RD14BB2C152J | RES. CARBON | 1.5K | 5% | 1/6W |
| R156 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R157 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R158 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R159 | RD14BB2C163J | RES. CARBON | 16K | 5% | 1/6W |
| R160 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R161 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R162 | RD14BB2C432J | RES. CARBON | 4.3K | 5% | 1/6W |
| R163 | RD14BB2C152J | RES. CARBON | 1.5K | 5% | 1/6W |
| R164 | NO USE | | | | |
| R165 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R166 | RD14BB2C432J | RES. CARBON | 4.3K | 5% | 1/6W |
| R167 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R168 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R169 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R170 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R171 | NO USE | | | | |
| R172 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R173 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R174 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R175 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R176 | RD14BB2C273J | RES. CARBON | 27K | 5% | 1/6W |
| R177 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R178 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R179 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R180 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R181 | RN14BK2C3301F | RES. METAL FILM | 3.3K | 1% | 1/6W |
| R182 | RN14BK2C3301F | RES. METAL FILM | 3.3K | 1% | 1/6W |
| R183 | RD14BB2C271J | RES. CARBON | 270 | 5% | 1/6W |
| R184 | RD14BB2C271J | RES. CARBON | 270 | 5% | 1/6W |
| R185 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R186 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R187 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R188 | RN14BK2E6802F | RES. METAL FILM | 68K | 1% | 1/4W |
| R189 | RN14BK2E6802F | RES. METAL FILM | 68K | 1% | 1/4W |
| R190 | RN14BK2C1001F | RES. METAL FILM | 1K | 1% | 1/6W |
| R191 | RN14BK2C1001F | RES. METAL FILM | 1K | 1% | 1/6W |
| R192 | RD14DB3A183J | RES. CARBON | 18K | 5% | 1W |
| R193 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R194 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R195 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R196 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R197 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R198 | RD14BB2C183J | RES. CARBON | 18K | 5% | 1/6W |
| R199 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R200 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R203 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R207 | RD14BB2C820J | RES. CARBON | 82 | 5% | 1/6W |
| R208 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R209 | NO USE | | | | |
| R210 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R211 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R212 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| R213 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R214 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R215 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R216 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R217 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R218 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R219 | RD14BB2C223J | RES. CARBON | 22K | 5% | 1/6W |
| R220 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R221 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R222 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R223 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R224 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R225 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R226 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R227 | RD14BB2C133J | RES. CARBON | 13K | 5% | 1/6W |
| R228 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R229 | RD14BB2C394J | RES. CARBON | 390K | 5% | 1/6W |
| R230 | RD14BB2C333J | RES. CARBON | 33K | 5% | 1/6W |
| R231 | RD14BB2C244J | RES. CARBON | 240K | 5% | 1/6W |
| R232 | RD14BB2C820J | RES. CARBON | 82 | 5% | 1/6W |
| R233 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R234 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R235 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R236 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R237 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R238 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R239 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R240 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R241 | RD14BB2C122J | RES. CARBON | 1.2K | 5% | 1/6W |
| R242 | RD14BB2C122J | RES. CARBON | 1.2K | 5% | 1/6W |
| R243 | RD14BB2C151J | RES. CARBON | 150 | 5% | 1/6W |
| R244 | RD14BB2C362J | RES. CARBON | 3.6K | 5% | 1/6W |
| R245 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R246 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R247 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R248 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R249 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R250 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R251 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R252 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R253 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R254 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R255 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R256 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| R257 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R258 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R259 | RN14BK2C5100F | RES. METAL FILM | 510 | 1% | 1/6W |
| R260 | RD14BB2C202J | RES. CARBON | 2K | 5% | 1/6W |
| R261 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R262 | NO USE | | | | |
| R263 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R264 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R265 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R266 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R267 | RD14BB2C622J | RES. CARBON | 6.2K | 5% | 1/6W |
| R268 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R269 | RD14BB2C134J | RES. CARBON | 130K | 5% | 1/6W |
| R270 | RD14BB2C181J | RES. CARBON | 180 | 5% | 1/6W |
| R271 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R272 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R273 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R274 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R275 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R276 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R277 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R278 | NO USE | | | | |
| R279 | RD14BB2C203J | RES. CARBON | 20K | 5% | 1/6W |
| R280 | RD14BB2C622J | RES. CARBON | 6.2K | 5% | 1/6W |
| R281 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R282 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R283 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R284 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R285 | RD14BB2C183J | RES. CARBON | 18K | 5% | 1/6W |
| R286 | NO USE | | | | |
| R287 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R288 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R289 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| S001 | S32-4008-05 | LEVER SWITCH | | | |
| S002 | S33-4503-05 | LEVER SWITCH | | | |
| S003 | S01-5503-05 | ROTARY SWITCH | | | |
| S004 | S37-2005-05 | LEVER SWITCH | | | |
| S005 | S37-2005-05 | LEVER SWITCH | | | |
| S006 | S33-2501-05 | LEVER SWITCH | | | |
| TC001 | C05-0445-05 | CAP. TRIMMER | 20P | | |
| TC002 | C05-0445-05 | CAP. TRIMMER | 20P | | |
| TC003 | NO USE | | | | |
| TC004 | C05-0445-05 | CAP. TRIMMER | 20P | | |
| TC005 | C05-0445-05 | CAP. TRIMMER | 20P | | |
| U001 | TL082CP | IC, OP AMP | | | |
| U002 | MC14081BCP | IC, QUAL 2-INPUT AND GATE | | | |
| U003 | MC10105L | IC DIGITAL | | | |
| U004 | MC10107L | IC, QUAD 2-INPUT EXC OR/NOR | | | |
| U005 | MC10103L | IC, QUAD 2-INPUT OR GATE | | | |
| U006 | MC10131L | IC, DUAL D-FFS | | | |
| U007 | MC10104L | IC, QUAD 2-INPUT AND GATE | | | |
| U008 | MC10105L | IC DIGITAL | | | |
| U009 | MC10103L | IC, QUAD 2-INPUT OR GATE | | | |
| U010 | MC10102L | IC, QUAD 2-INPUT NOR GATE | | | |
| U011 | SN74LS112AN | IC, DUAL JK-FF | | | |
| U012 | SN74LS10N | IC, TRPLE 3-INPUT NAND GATE | | | |
| U013 | SN74LS00N | IC, QUAD 2-INPUT NAND GATE | | | |
| U014 | SN74LS08N | IC, QUAD 2-INPUT AND GATE | | | |
| U015 | SN74LS08N | IC, QUAD 2-INPUT AND GATE | | | |
| U016 | SN74LS257AN | IC, QUAD DATE SELECTORS | | | |
| U017 | SN74LS32N | IC, QUAD 2-INPUT OR GATE | | | |
| U018 | SN74LS112AN | IC, DUAL JK-FF | | | |
| VR001 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR002 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR003 | R23-9503-05 | V.R. | 10K/20K | | |
| VR004 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR005 | R12-2517-05 | RES. SEMI FIXED | 10K B | | |
| VR006 | R12-3536-05 | RES. SEMI FIXED | 10K B | | |
| VR007 | R12-2517-05 | RES. SEMI FIXED | 10K B | | |
| VR008 | R12-0562-05 | RES. SEMI FIXED | 200 B | | |
| VR009 | R12-1528-05 | RES. SEMI FIXED | 1K B | | |
| VR010 | R12-2517-05 | RES. SEMI FIXED | 10K B | | |
| VR011 | R12-1528-05 | RES. SEMI FIXED | 1K B | | |
| VR012 | R01-1515-05 | V.R. | 1K | | |
| VR013 | R12-3537-05 | RES. SEMI FIXED | 20K B | | |
| VR014 | R01-3514-05 | V.R. | 20K | | |
| VR015 | R23-3501-05 | V.R. | 10K X2 | | |
| VR016 | R12-3536-05 | RES. SEMI FIXED | 10K B | | |
| VR017 | R23-9503-05 | V.R. | 10K/20K | | |
| VR018 | R23-3501-05 | V.R. | 10K X2 | | |
| VR019 | R10-9505-05 | V.R. | 1K/200K | | |
| VR020 | R10-9505-05 | V.R. | 1K/200K | | |

## HIGH VOLTAGE UNIT

### X68-1460-00

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E31-2170-05 | JUMPING WIRE | | | |
| | F01-0813-05 | HEAT SINK | | | |
| | F15-0727-04 | HOLDER (NEON TUBE) | | | |
| | J25-5101-03 | PCB (UNMOUNTED) | | | |
| | N30-3006-46 | SCREW, PAN HD | M 3X6 | | |
| C001 | CC45CH1H070D | CAP. CERAMIC | 7P | 0.5P | 50V |
| C002 | CC45CH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C003 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25% | 500V |
| C004 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25% | 500V |
| C005 | CC45CH2H050C | CAP. CERAMIC | 5P | 0.25P | 500V |
| C006 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25% | 500V |
| C007 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C008 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C009 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C010 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C011 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C012 | NO USE | | | | |
| C013 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C014 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C015 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C016 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C017 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C018 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C019 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C020 | CK45E3D102P | CAP. CERAMIC | 1000P | | 2K |
| C021 | CQ92FM1H154K | CAP. MYLAR | 0.15 | 10% | 50V |
| C022 | CQ92FM1H154K | CAP. MYLAR | 0.15 | 10% | 50V |
| C023 | NO USE | | | | |
| C024 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C025 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C026 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C027 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C028 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C029 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C030 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C031 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C032 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C033 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C034 | CE04W2C3R3 | CAP. ELECTRO | 3.3 | | 160V |
| C035 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| D001 | 1SS132 | DIODE | | | |
| D002 | NO USE | | | | |
| D003 | 1SS132 | DIODE | | | |
| D004 | 1SS83 | DIODE | | | |
| D005 | 1SS83 | DIODE | | | |
| D006 | 1SR35-200 | DIODE | | | |
| D007 | 1SR35-200 | DIODE | | | |
| D008 | 1SS83 | DIODE | | | |
| D009 | 1SS83 | DIODE | | | |
| D010 | 1SR35-200 | DIODE | | | |
| D011 | 1SS132 | DIODE | | | |
| D012 | 1SS132 | DIODE | | | |
| D013 | 1SS132 | DIODE | | | |
| D014 | 1SR35-200 | DIODE | | | |
| L001 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L002 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| NL001 | NE-2B | NEON LAMP | | | |
| NL002 | NE-2B | NEON LAMP | | | |
| NL003 | NE-2B | NEON LAMP | | | |
| NL004 | NE-2B | NEON LAMP | | | |
| P001 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P004 | E40-0332-05 | PIN CONNECTOR | 3 P | | |
| P011 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P020 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P024 | E40-0332-05 | PIN CONNECTOR | 3 P | | |
| P032 | E40-0873-05 | PIN CONNECTOR | 8 P | | |
| P039 | E40-0703-05 | PIN CONNECTOR | 7 P | | |
| Q001 | 2SA1208(S) | TR. SI, PNP | | | |
| Q002 | 2SC2910(S) | TR. SI, NPN | | | |
| Q003 | 2SA1210(S) | TR. SI, PNP | | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| Q004 | 2SA1005(K) | TR. SI, PNP | | | |
| Q005 | 2SC2912(S) | TR. SI, NPN | | | |
| Q006 | 2SA1175(F) | TR. SI, PNP | | | |
| Q007 | 2SD613(E) | | | | |
| Q008 | 2SC2271(D) | TR. SI, NPN | | | |
| Q009 | NO USE | TR. SI, NPN | | | |
| R001 | RD14DB2H103J | RES. CARBON | 10K | 5% | 1/2W |
| R002 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R003 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R004 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R005 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R006 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R007 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R008 | RD14BB2C152J | RES. CARBON | 1.5K | 5% | 1/6W |
| R009 | RD14BB2C124J | RES. CARBON | 120K | 5% | 1/6W |
| R010 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R011 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R012 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R013 | RD14BB2C124J | RES. CARBON | 120K | 5% | 1/6W |
| R014 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R015 | RD14BB2C752J | RES. CARBON | 7.5K | 5% | 1/6W |
| R016 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R017 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R018 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R019 | RD14BB2E334J | RES. CARBON | 330K | 5% | 1/4W |
| R020 | R92-1034-05 | RES. METAL FILM | 47M | 5% | 1/2W |
| R021 | RD14BB2E334J | RES. CARBON | 330K | 5% | 1/4W |
| R022 | R92-1034-05 | RES. METAL FILM | 47M | 5% | 1/2W |
| R023 | R92-1165-05 | RES. FIXED | 6.8M | | |
| R024 | R92-1154-05 | RES. FIXED | 11M | | |
| R029 | RN14BK2C1003F | RES. METAL FILM | 100K | 1% | 1/6W |
| R030 | R92-1125-05 | RES. FIXED | 7.5M | | |
| R031 | R92-1125-05 | RES. FIXED | 7.5M | | |
| R035 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R036 | NO USE | | | | |
| R037 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R038 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R039 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R040 | RD14BB2C563J | RES. CARBON | 56K | 5% | 1/6W |
| R041 | RD14BB2C563J | RES. CARBON | 56K | 5% | 1/6W |
| R042 | RD14BB2C133J | RES. CARBON | 13K | 5% | 1/6W |
| R043 | RD14BB2C273J | RES. CARBON | 27K | 5% | 1/6W |
| R044 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| U001 | NJM4558D | IC | | | |
| VR001 | R12-5525-05 | RES. SEMI FIXED | 100K | B | |

## CRT SOCKET UNIT

### X81-1600-02

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E01-0103-05 | CRT SOCKET | | | |
| | E23-0503-05 | TERMINAL | | | |
| | J25-5102-04 | PCB (UNMOUNTED) | | | |
| C001 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C002 | CC45CH1H010C | CAP. CERAMIC | 1P | 0.25P | 50V |
| J001 | E31-2611-05 | LEAD WIRE WITH CONNECTOR | | | |
| J002 | E31-2612-05 | LEAD WIRE WITH CONNECTOR | | | |
| J003 | NO USE | | | | |
| J004 | E31-2614-05 | LEAD WIRE WITH CONNECTOR | | | |
| R003 | R92-1061-05 | JUMPING RES. | ZERO OHM | | |
| R004 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |

# PARTS LIST

## CS-1065 MAIN CHASSIS

### Y70-1560-00

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| 1 | AR4133S | LED (RED) |
| 2 | A01-1155-02 | CASE |
| 3 | A01-1156-12 | CASE |
| 4 | A13-0904-12 | FRAME |
| 5 | A13-0905-12 | FRAME |
| 6 | A13-0906-12 | FRAME |
| 7 | A13-0912-02 | FRAME |
| 8 | A20-2795-11 | PANEL |
| 9 | A21-1086-03 | DECORATIVE PANEL |
| 10 | A22-0852-12 | SUB PANEL |
| 11 | A23-1666-02 | REAR PANEL |
| | A33-0502-05 | REFLECTOR W/LAMP ASS'Y |
| 13 | B07-0714-03 | ESCUTCHEON |
| 14 | B19-0726-04 | FILTER |
| 15 | B20-0923-04 | SCALE |
| 16 | B30-0951-25 | LAMP |
| | B30-0952-05 | LAMP W/B30-0951-05 |
| | B40-2765-04 | NAME PLATE (SERIAL NO) |
| 19 | B40-2865-03 | NAME PLATE |
| 25 | B41-0710-04 | CAUTION LABEL (HIGH VOLTAGE) |
| 28 | B41-0787-03 | CAUTION LABEL |
| | B50-7587-00 | INSTRUCTION MANUAL |
| | C91-1233-05 | CAP. CERAMIC 3P 0.25P 3KV |
| 20 | D19-0908-03 | EXTEN SION SHAFT |
| 21 | E04-0251-05 | BNC RECEPTACLE |
| 22 | E18-0365-05 | INLET SOCKET |
| 23 | E21-0660-04 | TERMINAL(CAL) |
| 24 | E21-0667-05 | TERMINAL |
| | E23-0018-04 | EARTH LUG |
| | E23-0042-04 | ERATH LUG |
| | E23-0513-05 | EARTH LUG |
| | E23-0552-04 | EARTHPLATE |
| 26 | E23-0561-14 | EARTHPLATE |
| 27 | E30-1818-05 | POWER CORD (JIS) |
| | E31-0564-05 | LEAD WIRE WITH CONNECTOR |
| | E31-0717-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2558-15 | LEAD WIRE WITH CONNECTOR |
| | E31-2617-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2618-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2619-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2620-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2621-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2622-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2623-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2624-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2625-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2626-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2627-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2628-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2629-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2630-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2631-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2668-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2678-05 | LEAD WIRE WITH CONNECTOR |
| | E33-4096-00 | WIRE ASSY |
| | F05-1023-05 | FUSE 1A |
| | F07-0908-14 | PROTECTION COVER |
| 29 | F10-1567-14 | SHIELD PLATE |
| 30 | F10-1593-04 | SHIELD PLATE |
| 31 | F11-0996-04 | SHIELD CASE |
| 32 | F11-0998-03 | SHIELD CASE |
| 33 | F20-0658-04 | INSULATOR |
| 34 | G01-0909-04 | COIL SPRING |
| 35 | G02-0606-14 | SPRING FOR HANDLE |
| 36 | G16-0611-04 | REFLECTOR SHEET (L) |
| 37 | G16-0612-04 | REFLECTOR SHEET (R) |
| | H01-5799-04 | CARTON BOX |
| | H10-2828-02 | FOAMED STYRENE PAD |
| | H10-2829-02 | FOAMED STYRENE PAD |
| | H12-0564-04 | PAD |
| | H20-1719-04 | VINYL COVER |
| | H25-0016-00 | BAG |
| 38 | J02-0089-05 | RUBBER LEG |
| 39 | J10-0409-02 | BEZEL |
| | J19-1620-05 | CORD CLAMP |
| 41 | J19-1635-04 | HOLDER FOR LED |
| 42 | J19-1644-13 | CRT HOLDER |
| 43 | J19-1645-24 | BRACKET |
| 44 | J19-1646-04 | BRACKET |
| 45 | J21-2906-05 | GEAR FOR HANDLE |
| 46 | J21-2907-05 | RING FOR HANDLE |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| 47 | J21-4555-04 | BRACKET |
| 48 | J21-4562-03 | BRACKET FOR CRT |
| | J25-3000-05 | P.C.BOARD W/LAMP ASS'Y |
| 49 | J31-0608-05 | COLLAR |
| 50 | J42-0528-05 | BUSHING |
| 51 | J59-0403-05 | NYLON RIVET |
| 52 | J61-0049-05 | WIRE BAND |
| | J61-0408-05 | WIRE WRAPPING BAND |
| | J61-0522-05 | WIRE WRAPPING BAND |
| 55 | K01-0524-05 | HANDLE |
| 56 | K21-0860-13 | KNOB |
| 57 | K21-0885-03 | KNOB |
| 58 | K21-0888-04 | KNOB |
| 59 | K21-0889-04 | KNOB |
| 60 | K23-0803-13 | KNOB |
| 61 | K23-0805-03 | KNOB |
| 62 | K27-0530-14 | KNOB |
| 63 | L01-9526-05 | POWER TRANSFORMER |
| 64 | L39-0524-05 | COIL |
| 65 | L76-0110-05 | DELAY LINE |
| | N08-0611-04 | DRESSED SCREW |
| | N09-0623-04 | SCREW |
| | N09-0705-05 | SCREW, HEX SOCKET FLAT HD |
| | N09-0726-05 | SCREW |
| | N09-0731-05 | SCREW |
| | N09-0739-05 | SCREW |
| | N10-2030-46 | NUT, HEX |
| | N14-0609-04 | NUT |
| | N14-0624-04 | NUT |
| | N14-0625-04 | NUT |
| | N15-1030-41 | WASHER, FLAT FOR M3 |
| | N15-1110-46 | WASHER |
| | N17-1030-46 | TOOTHED LOCK WASHER FOR M3 |
| | N19-0710-05 | WASHER |
| | N19-0725-04 | WASHER |
| | N30-3035-46 | SCREW, PAN HD M 3X35 |
| | N32-3008-41 | SCREW, FLAT HD M 3X8 |
| | N34-3012-41 | SCREW, TRUSS M 3X8 |
| | N88-3008-41 | SCREW, FLAT HD TAP TITE |
| | N89-3008-41 | SCREW, BINDING TAP TITE |
| | N89-3010-41 | SCREW, BINDING TAP TITE |
| | N89-3016-46 | SCREW, BINDING TAP TITE |
| | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| 66 | R03-1509-05 | V.R. 10K |
| 67 | R05-3505-05 | V.R. 20K B |
| 68 | R05-8001-05 | V.R. 3M B |
| 69 | R29-1502-05 | V.R. 100K |
| 70 | W01-0503-04 | CORD WRAP |
| 71 | W02-0423-05 | HIGH VOLTAGE POWER BLOCK |
| 72 | X68-1460-00 | HIGH VOLTAGE UNIT |
| 73 | X73-1650-00 | VERTICAL PREAMP UNIT |
| 74 | X73-1660-00 | VERTICAL OUTPUT AMP UNIT |
| 75 | X74-1440-00 | HOR. SWEEP UNIT |
| 76 | X81-1600-00 | CRT SOCKET UNIT |
| | Y87-1250-00 | PROBE(PC-29) |
| 77 | 150PTM31 | CRT |
| | 212-3017-05 | TUBE (PLASTIC) |

# PARTS LIST

## VERTICAL PRE AMP UNIT

### X73-1650-00

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E31-2170-05 | JUMPING WIRE | | | |
| | E33-4105-00 | WIRE ASSY | | | |
| | F10-1588-04 | SHIELD PLATE | | | |
| | F10-1589-04 | SHIELD PLATE | | | |
| | F10-1590-04 | SHIELD PLATE | | | |
| | F10-1591-04 | SHIELD PLATE | | | |
| | J25-5104-22 | PCB (UNMOUNTED) | | | |
| | J61-0408-05 | WIRE WRAPPING BAND | | | |
| | S02-4504-05 | ROTARY SWITCH | | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| C001 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C002 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C003 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C004 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C005 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C006 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C007 | NO USE | | | | |
| C008 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C009 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C010 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C011 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C012 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C013 | NO USE | | | | |
| C014 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C015 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C016 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C017 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C018 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C019 | C91-1239-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C020 | C91-1231-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C021 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C022 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C023 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C024 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C025 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C026 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C027 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C028 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C029 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C030 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C031 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C032 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C033 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C034 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C035 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C036 | C91-1239-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C037 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C038 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C039 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C040 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C041 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C042 | NO USE | | | | |
| C043 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C044 | CC45CH1H0R5C | CAP. CERAMIC | 0.5P | 0.25P | 50V |
| C045 | CC45CH1H0R5C | CAP. CERAMIC | 0.5P | 0.25P | 50V |
| C046 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C047 | C91-1227-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C048 | CC45CH1H070D | CAP. CERAMIC | 7P | 0.5P | 50V |
| C049 | CC45CH1H070D | CAP. CERAMIC | 7P | 0.5P | 50V |
| C050 | C91-1231-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C055 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C056 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C059 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C060 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C061 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C062 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C063 | CE04W1C101M | CAP. ELECTRO | 100 | 20% | 16V |
| C064 | CE04W1C101M | CAP. ELECTRO | 100 | 20% | 16V |
| C065 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C066 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C067 | CC45CH1H090D | CAP. CERAMIC | 9P | 0.5P | 50V |
| C068 | CC45CH1H090D | CAP. CERAMIC | 9P | 0.5P | 50V |
| C069 | C91-1223-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C070 | C91-1228-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C071 | C91-1230-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C072 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C073 | CQ92M1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C074 | CC45CH1H120J | CAP. CERAMIC | 12P | 5% | 50V |
| 6075 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C076 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C077 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C078 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C079 | C91-0745-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C080 | C91-0745-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C081 | C91-0745-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C082 | CE04DW0J222M | CAP. ELECTRO | 2200 | 20% | 6.3V |
| C083 | CE04DW0J222M | CAP. ELECTRO | 2200 | 20% | 6.3V |
| C084 | CQ92M1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C085 | CQ92M1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C086 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C087 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C088 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C089 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C090 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C091 | NO USE | | | | |
| C092 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C095 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C096 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C097 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C098 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C101 | CE04W1C221M | CAP. ELECTRO | 220 | 20% | 16V |
| C102 | CE04W1C221M | CAP. ELECTRO | 220 | 20% | 16V |
| C103 | CE04W1C221M | CAP. ELECTRO | 220 | 20% | 16V |
| D001 | 1S1544A | DIODE | | | |
| D002 | 1SS132 | DIODE | | | |
| D003 | 1SS132 | DIODE | | | |
| D004 | 1S1544A | DIODE | | | |
| D005 | 1SS132 | DIODE | | | |
| D006 | 1SS132 | DIODE | | | |
| D007 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D008 | 1SS132 | DIODE | | | |
| D009 | 1SS132 | DIODE | | | |
| D010 | MTZ7.5JC | DIODE ZENER | 7.5V | | |
| D011 | 1SS132 | DIODE | | | |
| D012 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D013 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D014 | 1SS132 | DIODE | | | |
| D015 | 1S1544A | DIODE | | | |
| D016 | 1SS132 | DIODE | | | |
| D017 | 1SS132 | DIODE | | | |
| D018 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D019 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D020 | 1SS132 | DIODE | | | |
| D021 | 1SS132 | DIODE | | | |
| J006 | E31-2616-05 | LEAD WIRE WITH CONNECTOR | | | |
| J027 | E31-2672-05 | LEAD WIRE WITH CONNECTOR | | | |
| J028 | E31-2673-05 | LEAD WIRE WITH CONNECTOR | | | |
| J029 | E31-2675-05 | LEAD WIRE WITH CONNECTOR | | | |
| J030 | E31-2676-05 | LEAD WIRE WITH CONNECTOR | | | |
| J033 | E31-2698-05 | LEAD WIRE WITH CONNECTOR | | | |
| J062 | E31-2673-05 | LEAD WIRE WITH CONNECTOR | | | |
| J063 | E31-2675-05 | LEAD WIRE WITH CONNECTOR | | | |
| J064 | E31-2698-05 | LEAD WIRE WITH CONNECTOR | | | |
| J065 | E31-2698-05 | LEAD WIRE WITH CONNECTOR | | | |
| P010 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P011 | NO USE | | | | |
| P012 | E40-0374-05 | PIN CONNECTOR | 3 P | | |
| P013 | E40-0573-05 | PIN CONNECTOR | 5 P | | |
| P016 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P017 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P018 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P028 | E40-0574-05 | PIN CONNECTOR | 5 P | | |
| P029 | E40-0674-05 | PIN CONNECTOR | 6 P | | |
| P030 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P042 | E40-0312-05 | PIN CONNECTOR | 2 P | | |
| P056 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P057 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P058 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P059 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P060 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| Q001 | 2SK304(F) | FET, N-CHANNEL | | | |
| Q002 | 2SC3315(D) | TR, SI, NPN | | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| Q003 | 2SA1005(K) | TR. SI, PNP |
| Q004 | 2SA1005(K) | TR. SI, PNP |
| Q005 | 2SC3354(S,T) | TR. SI, NPN |
| Q006 | 2SC3354(S,T) | TR. SI, NPN |
| Q007 | 2SC3354(S,T) | TR. SI, NPN |
| Q008 | 2SC3354(S,T) | TR. SI, NPN |
| Q009 | 2SK304(F) | FET, N-CHANNEL |
| Q010 | 2SC3315(D) | TR. SI, NPN |
| Q011 | 2SA1005(K) | TR. SI, PNP |
| Q012 | 2SA1005(K) | TR. SI, PNP |
| Q013 | 2SA1005(K) | TR. SI, PNP |
| Q014 | 2SA1005(K) | TR. SI, PNP |
| Q015 | 2SC3354(S,T) | TR. SI, NPN |
| Q016 | 2SC3354(S,T) | TR. SI, NPN |
| Q017 | 2SC3354(S,T) | TR. SI, NPN |
| Q018 | 2SC3354(S,T) | TR. SI, NPN |
| Q019 | 2SK304(F) | FET, N-CHANNEL |
| Q020 | 2SK304(F) | FET, N-CHANNEL |
| Q021 | 2SA1005(K) | TR. SI, PNP |
| Q022 | 2SC3315(D) | TR. SI, NPN |
| Q023 | 2SC3315(D) | TR. SI, NPN |
| Q024 | 2SC3354(S,T) | TR. SI, NPN |
| Q025 | 2SC3354(S,T) | TR. SI, NPN |
| Q026 | 2SC3354(S,T) | TR. SI, NPN |
| Q027 | 2SC3354(S,T) | TR. SI, NPN |
| Q028 | 2SC3315(D) | TR. SI, NPN |
| Q029 | 2SC3315(D) | TR. SI, NPN |
| Q030 | 2SA1206 | TR. SI, PNP |
| Q031 | 2SA1206 | TR. SI, PNP |
| Q032 | 2SC2644 | TR. SI, NPN |
| Q033 | 2SC2644 | TR. SI, NPN |
| Q034 | 2SK184(Y) | FET, N-CHANNEL |
| Q035 | 2SK184(Y) | FET, N-CHANNEL |
| Q036 | 2SC3315(D) | TR. SI, NPN |
| Q037 | 2SC3315(D) | TR. SI, NPN |
| Q038 | 2SA1005(K) | TR. SI, PNP |
| Q039 | 2SA1005(K) | TR. SI, PNP |
| Q040 | 2SA1005(K) | TR. SI, PNP |
| Q041 | 2SA1005(K) | TR. SI, PNP |
| Q042 | 2SC3354(S,T) | TR. SI, NPN |
| Q043 | 2SC3354(S,T) | TR. SI, NPN |
| Q044 | 2SC1973 | TR. SI, NPN |
| Q045 | 2SC3315(D) | TR. SI, NPN |
| Q046 | 2SC3315(D) | TR. SI, NPN |
| Q047 | 2SA1005(K) | TR. SI, PNP |
| Q048 | 2SA1005(K) | TR. SI, PNP |
| Q049 | 2SA1005(K) | TR. SI, PNP |
| Q050 | 2SC2785(F) | TR. SI, NPN |
| Q051 | 2SC2785(F) | TR. SI, NPN |
| Q052 | 2SC3315(D) | TR. SI, NPN |
| Q053 | 2SC3315(D) | TR. SI, NPN |
| Q054 | 2SA1005(K) | TR. SI, PNP |
| Q055 | 2SA1005(K) | TR. SI, PNP |
| Q056 | 2SA1005(K) | TR. SI, PNP |
| Q057 | 2SA1175(F) | TR. SI, PNP |
| Q058 | 2SA1175(F) | TR. SI, PNP |
| Q059 | 2SA1005(K) | TR. SI, PNP |
| Q060 | 2SC3354(S,T) | TR. SI, NPN |
| Q061 | 2SC3354(S,T) | TR. SI, NPN |
| Q062 | 2SC2785(F) | TR. SI, NPN |
| Q063 | 2SC2785(F) | TR. SI, NPN |
| Q064 | 2SC2785(F) | TR. SI, NPN |
| Q065 | 2SC3315(D) | TR. SI, NPN |
| Q066 | 2SC3315(D) | TR. SI, NPN |
| Q067 | 2SC3315(D) | TR. SI, NPN |
| Q068 | 2SC3315(D) | TR. SI, NPN |
| Q069 | 2SK304(F) | FET, N-CHANNEL |
| Q070 | 2SK304(F) | FET, N-CHANNEL |
| Q071 | 2SA1005(K) | TR. SI, PNP |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R001 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R002 | RD14BB2C330J | RES. CARBON | 33 | 5% | 1/6W |
| R003 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R004 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R005 | RN14BK2C5003F | RES. METAL FILM | 500K | 1% | 1/6W |
| R006 | RN14BK2C5003F | RES. METAL FILM | 500K | 1% | 1/6W |
| R007 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R008 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R009 | RD14BB2C162J | RES. CARBON | 1.6K | 5% | 1/6W |
| R010 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R011 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R012 | RD14BB2C132J | RES. CARBON | 1.3K | 5% | 1/6W |
| R013 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R014 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R015 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R016 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R017 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R018 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R019 | RD14BB2C181J | RES. CARBON | 180 | 5% | 1/6W |
| R020 | RN14BK2C30R0F | RES. METAL FILM | 30.0 | 1% | 1/6W |
| R021 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R022 | RD14BB2C621J | RES. CARBON | 620 | 5% | 1/6W |
| R023 | RD14BB2C270J | RES. CARBON | 27 | 5% | 1/6W |
| R024 | R92-1162-05 | RES. FIXED | 560 | 3,000PPM | |
| R025 | RN14BK2C1800F | RES. METAL FILM | 180 | 1% | 1/6W |
| R026 | RD14BB2C820J | RES. CARBON | 82 | 5% | 1/6W |
| R027 | NO USE | | | | |
| R028 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R029 | RD14BB2C560J | RES. CARBON | 56 | 5% | 1/6W |
| R030 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R031 | RN14BK2C1801F | RES. METAL FILM | 1.8K | 1% | 1/6W |
| R032 | RN14BK2C1801F | RES. METAL FILM | 1.8K | 1% | 1/6W |
| R033 | RN14BK2C2700F | RES. METAL FILM | 270 | 1% | 1/6W |
| R034 | RN14BK2C12R0F | RES. METAL FILM | 12.0 | 1% | 1/6W |
| R035 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R036 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R037 | RN14BK2C3900F | RES. METAL FILM | 390 | 1% | 1/6W |
| R038 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R039 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R040 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R041 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R042 | RN14BK2C5101F | RES. METAL FILM | 5.1K | 1% | 1/6W |
| R043 | RN14BK2C4700F | RES. METAL FILM | 470 | 1% | 1/6W |
| R044 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R045 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R046 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R047 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R048 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R049 | RN14BK2C1002F | RES. METAL FILM | 10K | 1% | 1/6W |
| R050 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R051 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R052 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R053 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R054 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R055 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R056 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R057 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R058 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R059 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R060 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R061 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R062 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R063 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R064 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R065 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R066 | RD14BB2C362J | RES. CARBON | 3.6K | 5% | 1/6W |
| R067 | RD14BB2C911J | RES. CARBON | 910 | 5% | 1/6W |
| R068 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R069 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R070 | NO USE | | | | |
| R071 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R072 | RD14BB2C330J | RES. CARBON | 33 | 5% | 1/6W |
| R073 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R074 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R075 | RN14BK2C5003F | RES. METAL FILM | 500K | 1% | 1/6W |
| R076 | RN14BK2C5003F | RES. METAL FILM | 500K | 1% | 1/6W |
| R077 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R078 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R079 | RD14BB2C162J | RES. CARBON | 1.6K | 5% | 1/6W |
| R080 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R081 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R082 | RD14BB2C132J | RES. CARBON | 1.3K | 5% | 1/6W |
| R083 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R084 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R085 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R086 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R087 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R088 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R089 | RD14BB2C181J | RES. CARBON | 180 | 5% | 1/6W |
| R090 | RN14BK2C30R0F | RES. METAL FILM | 30.0 | 1% | 1/6W |
| R091 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R092 | RD14BB2C621J | RES. CARBON | 620 | 5% | 1/6W |
| R093 | RD14BB2C270J | RES. CARBON | 27 | 5% | 1/6W |
| R094 | R92-1162-05 | RES. FIXED | 560 | 3,000PPM | |
| R095 | RN14BK2C1800F | RES. METAL FILM | 180 | 1% | 1/6W |
| R096 | RD14BB2C820J | RES. CARBON | 82 | 5% | 1/6W |
| R097 | NO USE | | | | |
| R098 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R099 | RD14BB2C560J | RES. CARBON | 56 | 5% | 1/6W |
| R100 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R101 | RN14BK2C1801F | RES. METAL FILM | 1.8K | 1% | 1/6W |
| R102 | RN14BK2C1801F | RES. METAL FILM | 1.8K | 1% | 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R103 | RN14BK2C2700F | RES. METAL FILM | 270 | 1% | 1/6W |
| R104 | RN14BK2C12R0F | RES. METAL FILM | 12.0 | 1% | 1/6W |
| R105 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R106 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R107 | RN14BK2C3900F | RES. METAL FILM | 390 | 1% | 1/6W |
| R108 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R109 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R110 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R111 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R112 | RN14BK2C5101F | RES. METAL FILM | 5.1K | 1% | 1/6W |
| R113 | RN14BK2C4700F | RES. METAL FILM | 470 | 1% | 1/6W |
| R114 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R115 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R116 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R117 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R118 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R119 | RN14BK2C1002F | RES. METAL FILM | 10K | 1% | 1/6W |
| R120 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R121 | RN14BK2C1002F | RES. METAL FILM | 10K | 1% | 1/6W |
| R122 | RN14BK2C3001F | RES. METAL FILM | 3K | 1% | 1/6W |
| R123 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R124 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R125 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R126 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R127 | RD14BB2C432J | RES. CARBON | 4.3K | 5% | 1/6W |
| R128 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R129 | RN14BK2C9100F | RES. METAL FILM | 910 | 1% | 1/6W |
| R130 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R131 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R132 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R133 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R134 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R135 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R136 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R137 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R138 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R139 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R140 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R141 | RD14BB2C362J | RES. CARBON | 3.6K | 5% | 1/6W |
| R142 | RD14BB2C911J | RES. CARBON | 910 | 5% | 1/6W |
| R143 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R144 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R145 | RD14BB2C183J | RES. CARBON | 18K | 5% | 1/6W |
| R146 | RN14BK2C9003F | RES. METAL FILM | 900K | 1% | 1/6W |
| R147 | RN14BK2C1003F | RES. METAL FILM | 100K | 1% | 1/6W |
| R148 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R149 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R150 | RD14BB2C684J | RES. CARBON | 680K | 5% | 1/6W |
| R151 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R152 | RD14BB2C122J | RES. CARBON | 1.2K | 5% | 1/6W |
| R153 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R154 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R155 | RD14BB2C162J | RES. CARBON | 1.6K | 5% | 1/6W |
| R156 | RD14BB2C432J | RES. CARBON | 4.3K | 5% | 1/6W |
| R157 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R158 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R159 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R160 | R92-1162-05 | RES. FIXED | 560 | 3,000PPM | |
| R161 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R162 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R163 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R164 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R165 | RD14BB2C362J | RES. CARBON | 3.6K | 5% | 1/6W |
| R166 | RD14BB2C911J | RES. CARBON | 910 | 5% | 1/6W |
| R167 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R168 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R169 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R170 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R171 | RN14BK2C6980F | RES. METAL FILM | 698 | 1% | 1/6W |
| R172 | RN14BK2C6980F | RES. METAL FILM | 698 | 1% | 1/6W |
| R173 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R174 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R175 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R176 | NO USE | | | | |
| R177 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R178 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R179 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R180 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R181 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R182 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R183 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R184 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R185 | RN14BK2C7500F | RES. METAL FILM | 750 | 1% | 1/6W |
| R186 | RN14BK2C2201F | RES. METAL FILM | 2.2K | 1% | 1/6W |
| R187 | RN14BK2C2201F | RES. METAL FILM | 2.2K | 1% | 1/6W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R188 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R189 | RN14BK2C8200F | RES. METAL FILM | 820 | 1% | 1/6W |
| R190 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R191 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R192 | RN14BK2C6200F | RES. METAL FILM | 620 | 1% | 1/6W |
| R193 | RN14BK2C6200F | RES. METAL FILM | 620 | 1% | 1/6W |
| R194 | RD14BB2C430J | RES. CARBON | 43 | 5% | 1/6W |
| R195 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R196 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R197 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R198 | RN14BK2C5600F | RES. METAL FILM | 560 | 1% | 1/6W |
| R199 | RN14BK2C1800F | RES. METAL FILM | 180 | 1% | 1/6W |
| R200 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R201 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R202 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R203 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R204 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R205 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R206 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R207 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R208 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R209 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R210 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R211 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R212 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R213 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R214 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R215 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R216 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R217 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R218 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R219 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R220 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R221 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R222 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R223 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R224 | RN14BK2C51R0F | RES. METAL FILM | 51.0 | 1% | 1/6W |
| R225 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R226 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R227 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R228 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R229 | RD14BB2C682J | RES. CARBON | 6.8K | 5% | 1/6W |
| R230 | NO USE | | | | |
| R231 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R232 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R233 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R234 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R235 | RD14BB2C682J | RES. CARBON | 6.8K | 5% | 1/6W |
| R236 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R237 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R238 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R239 | RD14BB2C511J | RES. CARBON | 510 | 5% | 1/6W |
| R240 | RD14BB2C682J | RES. CARBON | 6.8K | 5% | 1/6W |
| R241 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R242 | RD14BB2C511J | RES. CARBON | 510 | 5% | 1/6W |
| R243 | RD14BB2C202J | RES. CARBON | 2K | 5% | 1/6W |
| R244 | RD14BB2C202J | RES. CARBON | 2K | 5% | 1/6W |
| R245 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R246 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R247 | RD14BB2C512J | RES. CARBON | 5.1K | 5% | 1/6W |
| R248 | RD14BB2C242J | RES. CARBON | 2.4K | 5% | 1/6W |
| R249 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R250 | RD14BB2C621J | RES. CARBON | 620 | 5% | 1/6W |
| R251 | RD14BB2C622J | RES. CARBON | 6.2K | 5% | 1/6W |
| R252 | RN14BK2C2490F | RES. METAL FILM | 249 | 1% | 1/6W |
| R253 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R254 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R255 | RD14BB2C561J | RES. CARBON | 560 | 5% | 1/6W |
| R256 | RD14BB2C561J | RES. CARBON | 560 | 5% | 1/6W |
| R257 | RD14BB2C511J | RES. CARBON | 510 | 5% | 1/6W |
| R258 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R259 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R260 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R261 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R262 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R263 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R264 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R265 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R266 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R267 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R268 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R269 | NO USE | | | | |
| R270 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R271 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R272 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R273 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R274 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R275 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R276 | RD14BB2C161J | RES. CARBON | 160 | 5% | 1/6W |
| R279 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R280 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R281 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R282 | NO USE | | | | |
| R283 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R284 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R285 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R286 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R287 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R288 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R289 | RD14BB2C100J | RES. CARBON | 10 | 5% | 1/6W |
| R290 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R291 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R292 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R293 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R294 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R295 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R296 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R297 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R298 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R299 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R300 | RD14BB2C333J | RES. CARBON | 33K | 5% | 1/6W |
| R301 | NO USE | | | | |
| R302 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R303 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R304 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R305 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R306 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R307 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R308 | RD14BB2C333J | RES. CARBON | 33K | 5% | 1/6W |
| R309 | NO USE | | | | |
| R310 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R311 | RD14BB2C822J | RES. CARBON | 8.2K | 5% | 1/6W |
| R312 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R313 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R314 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R315 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| S001 | S32-4007-05 | LEVER SWITCH | | | |
| S002 | S32-4007-05 | LEVER SWITCH | | | |
| S003 | S33-2501-05 | LEVER SWITCH | | | |
| TC001 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC002 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC003 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC004 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC005 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC006 | C05-0443-05 | CAP. TRIMMER | 6P | | |
| TC007 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC008 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TC009 | C05-0444-05 | CAP. TRIMMER | 10P | | |
| TH001 | SDT1000 | THERMISTOR | | | |
| TH002 | SDT100 | THERMISTOR | | | |
| TH003 | SDT100 | THERMISTOR | | | |
| TH004 | SDT100 | THERMISTOR | | | |
| U001 | LF411CN | IC, DUAL JFET INPUT OP-AMP | | | |
| U002 | CA3127E | IC, TR, ARRY N-P-N | | | |
| U003 | LF411CN | IC, DUAL JFET INPUT OP-AMP | | | |
| U004 | CA3127E | IC, TR, ARRY N-P-N | | | |
| VR001 | R12-4510-05 | RES. SEMI FIXED | 50K B | | |
| VR002 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR003 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR004 | R12-4510-05 | RES. SEMI FIXED | 50K B | | |
| VR007 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR008 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR009 | R01-1513-05 | V.R. | 2K B | | |
| VR010 | R12-4510-05 | RES. SEMI FIXED | 50K B | | |
| VR011 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR012 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR013 | R12-4510-05 | RES. SEMI FIXED | 50K B | | |
| VR016 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR017 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR018 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR019 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |
| VR020 | R12-0563-05 | RES. SEMI FIXED | 500 B | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION | |
|---|---|---|---|
| VR021 | R12-2517-05 | RES. SEMI FIXED | 10K B |
| VR022 | R12-0561-05 | RES. SEMI FIXED | 100 B |
| VR023 | R12-0561-05 | RES. SEMI FIXED | 100 B |
| VR024 | R12-0561-05 | RES. SEMI FIXED | 100 B |
| VR025 | NO USE | | |
| VR026 | R12-0561-05 | RES. SEMI FIXED | 100 B |
| VR027 | R12-2517-05 | RES. SEMI FIXED | 10K B |
| VR028 | R01-1513-05 | V.R. | 2K B |
| VR029 | R06-1503-05 | V.R. | 2K B X2 |
| VR030 | R12-0561-05 | RES. SEMI FIXED | 100 B |
| VR031 | R12-0561-05 | RES. SEMI FIXED | 100 B |

## POWER & FINAL AMP UNIT

### X73-1660-00

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E31-2170-05 | JUMPING WIRE | | | |
| | E33-4097-00 | WIRE ASSY | | | |
| | F01-0855-03 | HEAT SINK | | | |
| | F02-0511-05 | HEAT SINK | | | |
| | J12-0504-05 | SPRING PIPE | | | |
| | J25-5105-13 | PCB (UNMOUNTED) | | | |
| | J30-0605-05 | SPACER | | | |
| | N09-0623-04 | SCREW | | | |
| | N09-0731-04 | SCREW | | | |
| | N14-0626-04 | NUT | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| C001 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C002 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C003 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C004 | CC45SL1H471J | CAP. CERAMIC | 470P | 5% | 50V |
| C005 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C006 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C007 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C008 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C009 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C010 | CC45CH1H180J | CAP. CERAMIC | 18P | 5% | 50V |
| C011 | C91-1233-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C012 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C013 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C014 | CE04W2A4R7M | CAP. ELECTRO | 4.7 | 20% | 100V |
| C015 | CE04W1A470M | CAP. ELECTRO | 47 | 20% | 10V |
| C016 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04W2C010 | CAP. ELECTRO | 1 | | 160V |
| C018 | CE04W2A471M | CAP. ELECTRO | 470 | 20% | 100V |
| C019 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C020 | CE04W1C472M | CAP. ELECTRO | 4700 | 20% | 16V |
| C021 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C022 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C023 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C024 | CE04W1E332M | CAP. ELECTRO | 3300 | 20% | 25V |
| C025 | CE04W1E332M | CAP. ELECTRO | 3300 | 20% | 25V |
| C026 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C027 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C028 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C029 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C030 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C031 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C032 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C033 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C034 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| D001 | 1SS132 | DIODE | | | |
| D002 | 1SS132 | DIODE | | | |
| D003 | S1VB40 | DIODE, BRIDGE | | | |
| D004 | S2VB40F | DIODE, BRIDGE | | | |
| D005 | S4VB40F | DIODE, BRIDGE | | | |
| D006 | S1VB40 | DIODE, BRIDGE | | | |
| D007 | 1SS132 | DIODE | | | |
| D008 | 1SS132 | DIODE | | | |
| D009 | NO USE | | | | |
| D010 | MTZ7.5JA | DIODE, ZENER | 7.1V | | |
| D011 | MTZ11JC | DIODE, ZENER | 11V | | |
| D012 | MTZ11JC | DIODE, ZENER | 11V | | |
| D013 | MTZ3.3JA | DIODE, ZENER | 3.2V | | |
| D014 | MTZ3.3JA | DIODE, ZENER | 3.2V | | |
| D015 | MTZ8.2JA | DIODE, ZENER | 9.6V | | |
| J050 | E31-2613-05 | LEAD WIRE WITH CONNECTOR | | | |
| J051 | E31-2613-05 | LEAD WIRE WITH CONNECTOR | | | |
| L001 | L40-1011-04 | FERRI INDUCTOR | 100UH | | |
| L002 | L40-1011-04 | FERRI INDUCTOR | 100UH | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| L003 | L40-2282-13 | FERRI INDUCTOR 0.22UH |
| L004 | L40-2282-13 | FERRI INDUCTOR 0.22UH |
| P009 | E40-0673-05 | PIN CONNECTOR 6 P |
| P012 | E40-0473-05 | PIN CONNECTOR 4 P |
| P013 | NO USE | |
| P014 | E40-0373-05 | PIN CONNECTOR 3 P |
| P019 | E40-0273-05 | PIN CONNECTOR 2 P |
| P020 | NO USE | |
| P021 | E40-0373-05 | PIN CONNECTOR 3 P |
| P032 | E40-0873-05 | PIN CONNECTOR 8 P |
| P036 | E40-1004-05 | PIN CONNECTOR 2 P |
| P040 | E40-0273-05 | PIN CONNECTOR 2 P |
| P041 | E40-0273-05 | PIN CONNECTOR 2 P |
| P042 | E40-0311-05 | PIN CONNECTOR 3P |
| P054 | E40-0273-05 | PIN CONNECTOR 2 P |
| Q001 | 2SA1206 | TR, SI, PNP |
| Q002 | 2SA1206 | TR, SI, PNP |
| Q003 | 2SC2644 | TR. SI, NPN |
| Q004 | 2SC2644 | TR. SI, NPN |
| Q005 | 2SC2644 | TR. SI, NPN |
| Q006 | 2SC2644 | TR. SI, NPN |
| Q007 | 2SC2644 | TR. SI, NPN |
| Q008 | 2SC2644 | TR. SI, NPN |
| Q009 | 2SC2644 | TR. SI, NPN |
| Q010 | 2SC2644 | TR. SI, NPN |
| Q011 | 2SC2644 | TR. SI, NPN |
| Q012 | 2SC2644 | TR. SI, NPN |
| Q013 | 2SC1164(O) | TR. SI, NPN |
| Q014 | 2SC1164(O) | TR. SI, NPN |
| Q015 | 2SC2271(D) | TR. SI, NPN |
| Q016 | 2SD1263A(P,Q,R) | TR, SI, NPN |
| Q017 | 2SC2271(D) | TR. SI, NPN |
| Q018 | 2SD1263A(P,Q,R) | TR, SI, NPN |
| Q019 | 2SB943(P,Q,R) | TR. SI, PNP |
| Q020 | 2SC2785(F) | TR. SI, NPN |
| Q021 | 2SD1268(P,Q,R) | TR, SI, NPN |
| Q022 | 2SB943(P,Q,R) | TR. SI, PNP |
| Q023 | 2SA684(R) | TR. SI, PNP |
| Q024 | 2SD1268(P,Q,R) | TR, SI, NPN |
| Q025 | 2SC1384(R) | TR, SI, NPN |
| Q026 | 2SD1262A(Q) | TR, SI, NPN |
| Q027 | 2SB939A(Q) | TR. SI, PNP |
| R001 | RN14BK2C91R0F | RES. METAL FILM 91.0 1% 1/6W |
| R002 | RN14BK2C91R0F | RES. METAL FILM 91.0 1% 1/6W |
| R003 | RD14BB2C561J | RES. CARBON 560 5% 1/6W |
| R004 | RD14BB2C561J | RES. CARBON 560 5% 1/6W |
| R005 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R006 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R007 | RN14BK2C5100F | RES. METAL FILM 510 1% 1/6W |
| R008 | RN14BK2C5100F | RES. METAL FILM 510 1% 1/6W |
| R009 | RN14BK2C3901F | RES. METAL FILM 3.9K 1% 1/6W |
| R010 | RN14BK2C3901F | RES. METAL FILM 3.9K 1% 1/6W |
| R011 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R012 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R013 | RN14BK2C3600F | RES. METAL FILM 360 1% 1/6W |
| R014 | RN14BK2C3600F | RES. METAL FILM 360 1% 1/6W |
| R015 | RN14BK2C1800F | RES. METAL FILM 180 1% 1/6W |
| R016 | RD14BB2C133J | RES. CARBON 13K 5% 1/6W |
| R017 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R018 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R019 | RD14BB2C100J | RES. CARBON 10 5% 1/6W |
| R020 | RD14BB2C100J | RES. CARBON 10 5% 1/6W |
| R021 | RN14BK2C4300F | RES. METAL FILM 430 1% 1/6W |
| R022 | RN14BK2C4300F | RES. METAL FILM 430 1% 1/6W |
| R023 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R024 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R025 | RD14BB2C122J | RES. CARBON 1.2K 5% 1/6W |
| R026 | RD14BB2C122J | RES. CARBON 1.2K 5% 1/6W |
| R027 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R028 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R029 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R030 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R031 | RD14BB2C303J | RES. CARBON 30K 5% 1/6W |
| R032 | RN14BK2C3901F | RES. METAL FILM 3.9K 1% 1/6W |
| R033 | RN14BK2E75R0F | RES. METAL FILM 75.0 1% 1/4W |
| R034 | RN14BK2E75R0F | RES. METAL FILM 75.0 1% 1/4W |
| R035 | RD14BB2C392J | RES. CARBON 3.9K 5% 1/6W |
| R036 | RD14BB2C100J | RES. CARBON 10 5% 1/6W |
| R037 | RD14BB2C100J | RES. CARBON 10 5% 1/6W |
| R038 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R039 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R040 | RN14BK2C6802F | RES. METAL FILM 68K 1% 1/6W |
| R041 | RN14BK2C6802F | RES. METAL FILM 68K 1% 1/6W |
| R042 | RD14BB2C301J | RES. CARBON 300 5% 1/6W |
| R043 | RN14BK2E75R0F | RES. METAL FILM 75.0 1% 1/4W |
| R044 | RS14AB3Y301J | RES. METAL FILM 300 5% 7W |
| R045 | RS14AB3Y301J | RES. METAL FILM 300 5% 7W |
| R046 | RN14BK2E75R0F | RES. METAL FILM 75.0 1% 1/4W |
| R047 | RD14BB2C301J | RES. CARBON 300 5% 1/6W |
| R048 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R049 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R050 | RN14BK2C1002F | RES. METAL FILM 10K 1% 1/6W |
| R051 | RD14BB2C301J | RES. CARBON 300 5% 1/6W |
| R052 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R053 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R054 | RD14BB2C163J | RES. CARBON 16K 5% 1/6W |
| R055 | RN14BK2C2002F | RES. METAL FILM 20K 1% 1/6W |
| R056 | RN14BK2C1103F | RES. METAL FILM 110K 1% 1/6W |
| R057 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R058 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R059 | RD14BB2C183J | RES. CARBON 18K 5% 1/6W |
| R060 | RN14BK2C2002F | RES. METAL FILM 20K 1% 1/6W |
| R061 | RN14BK2C2403F | RES. METAL FILM 240K 1% 1/6W |
| R062 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R063 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R064 | RN14BK2C9100F | RES. METAL FILM 910 1% 1/6W |
| R065 | RD14BB2C221J | RES. CARBON 220 5% 1/6W |
| R066 | RD14BB2C682J | RES. CARBON 6.8K 5% 1/6W |
| R067 | RN14BK2C2002F | RES. METAL FILM 20K 1% 1/6W |
| R068 | RN14BK2C1002F | RES. METAL FILM 10K 1% 1/6W |
| R069 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R070 | RD14BB2C473J | RES. CARBON 47K 5% 1/6W |
| R071 | RS14GB3A273J | RES. METAL FILM 27K 5% 1W |
| R072 | RD14BB2C105J | RES. CARBON 1M 5% 1/6W |
| R073 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R074 | RS14GB3A163J | RES. METAL FILM 16K 5% 1W |
| R075 | RD14BB2C105J | RES. CARBON 1M 5% 1/6W |
| R076 | RD14BB2C302J | RES. CARBON 3K 5% 1/6W |
| R077 | RD14BB2C200J | RES. CARBON 20 5% 1/6W |
| R078 | RD14BB2C241J | RES. CARBON 240 5% 1/6W |
| R079 | RN14BK2C3301F | RES. METAL FILM 3.3K 1% 1/6W |
| R080 | RN14BK2C9101F | RES. METAL FILM 9.1K 1% 1/6W |
| R081 | RN14BK2C2002F | RES. METAL FILM 20K 1% 1/6W |
| R082 | RN14BK2C2002F | RES. METAL FILM 20K 1% 1/6W |
| R083 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R084 | RD14BB2C473J | RES. CARBON 47K 5% 1/6W |
| R085 | RN14BK2C4302F | RES. METAL FILM 43K 1% 1/6W |
| R086 | RN14BK2C1003F | RES. METAL FILM 100K 1% 1/6W |
| R087 | RN14BK2C9102F | RES. METAL FILM 91K 1% 1/6W |
| R088 | RD14BB2C104J | RES. CARBON 100K 5% 1/6W |
| R089 | RN14BK2C8200F | RES. METAL FILM 820 1% 1/6W |
| R090 | RN14BK2C1000F | RES. METAL FILM 100 1% 1/6W |
| R091 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R092 | RD14BB2C390J | RES. CARBON 39 5% 1/6W |
| R093 | RD14BB2C390J | RES. CARBON 39 5% 1/6W |
| R094 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R095 | RD14BB2C221J | RES. CARBON 220 5% 1/6W |
| R096 | RD14BB2C221J | RES. CARBON 220 5% 1/6W |
| R097 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R098 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R099 | RD14BB2C561J | RES. CARBON 560 5% 1/6W |
| R100 | RD14BB2C243J | RES. CARBON 24K 5% 1/6W |
| TC001 | C05-0444-05 | CAP. TRIMMER 10P |
| TC002 | C05-0444-05 | CAP. TRIMMER 10P |
| U001 | NJM4558D | IC |
| U002 | NJM4558D | IC |
| U003 | NJM4558D | IC |
| U004 | NJM4558D | IC |
| VR001 | R12-1529-05 | RES. SEMI FIXED 2K B |
| VR002 | R12-0561-05 | RES. SEMI FIXED 100 B |

# PARTS LIST

## SWEEP UNIT

### X74-1440-00

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E31-2178-05 | JUMPING WIRE | | | |
| | E33-4091-00 | WIRE ASSY | | | |
| | F01-0820-04 | HEAT SINK | | | |
| | J25-5103-12 | PCB (UNMOUNTED) | | | |
| | N30-3006-46 | SCREW, PAN HD | M 3X6 | | |
| C001 | CQ92FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C002 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C003 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C004 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C005 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C006 | CE04W1C470M | CAP. ELECTRO | 47 | 20% | 16V |
| C007 | CE04W1C470M | CAP. ELECTRO | 47 | 20% | 16V |
| C008 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C009 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C010 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C011 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C012 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C013 | CC45CH1H680J | CAP. CERAMIC | 68P | 5% | 50V |
| C014 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C015 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C016 | CE04W1C470M | CAP. ELECTRO | 47 | 20% | 16V |
| C017 | NO USE | | | | |
| C018 | CC45CH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C019 | CQ92FM1H222K | CAP. MYLAR | 2200P | 10% | 50V |
| C020 | CC45CH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C021 | NO USE | | | | |
| C022 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C023 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C024 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C025 | C91-0574-05 | CAP. MYLAR | 1 | 5% | |
| C026 | C91-0573-05 | CAP. MYLAR | 0.01 | 1% | |
| C027 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C028 | CM93BD2A900J | CAP. MICA | 90P | 5% | 100V |
| C029 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C030 | CC45CH1H070D | CAP. CERAMIC | 7P | 0.5P | 50V |
| C031 | CE04W1C470M | CAP. ELECTRO | 47 | 20% | 16V |
| C032 | NO USE | | | | |
| C033 | CQ92FM1H222K | CAP. MYLAR | 2200P | 10% | 50V |
| C034 | NO USE | | | | |
| C035 | CQ92FM1H222K | CAP. MYLAR | 2200P | 10% | 50V |
| C036 | CE04W2C4R7 | CAP. ELECTRO | 4.7 | | 160V |
| C037 | CQ92FM1H473K | CAP. MYLAR | 0.047 | 10% | 50V |
| C038 | C91-0574-05 | CAP. MYLAR | 1 | 5% | |
| C039 | C91-0573-05 | CAP. MYLAR | 0.01 | 1% | |
| C040 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C041 | CM93BD2A900J | CAP. MICA | 90P | 5% | 100V |
| C042 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C043 | CC45SL1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C044 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C045 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C046 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C047 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C048 | NO USE | | | | |
| C049 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C050 | NO USE | | | | |
| C051 | CC45CH1H680J | CAP. CERAMIC | 68P | 5% | 50V |
| C052 | NO USE | | | | |
| C053 | CC45CH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C054 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C055 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C056 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C057 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C058 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C059 | NO USE | | | | |
| C060 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C063 | CC45CH1H070D | CAP. CERAMIC | 7P | 0.5P | 50V |
| C064 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C065 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C066 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C067 | CC45CH1H040C | CAP. CERAMIC | 4P | 0.25P | 50V |
| C068 | CC45CH1H040C | CAP. CERAMIC | 4P | 0.25P | 50V |
| C069 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C070 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C071 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C072 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C073 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C074 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C075 | CC45CH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C076 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C077 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C078 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C079 | CE04W2A3R3M | CAP. ELECTRO | 3.3 | 20% | 100V |
| C080 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C081 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C082 | NO USE | | | | |
| C083 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C084 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C085 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C086 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C087 | NO USE | | | | |
| C088 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C089 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C090 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C091 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C092 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C093 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C094 | CC45SL1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C095 | CE04W2C3R3 | CAP. ELECTRO | 3.3 | | 160V |
| C096 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C097 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C098 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C099 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C100 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C105 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C106 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C107 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C110 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C111 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C114 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C117 | C91-0769-05 | CAP. CERAMIC | 3P | 0.25P | 3KV |
| C118 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C119 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C120 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C121 | CE04W1C330M | CAP. ELECTRO | 33 | 20% | 16V |
| C122 | CQ92FM1H223K | CAP. MYLAR | 0.022 | 10% | 50V |
| C123 | NO USE | | | | |
| C124 | CC45CH1H030C | CAP. CERAMIC | 3P | 0.25P | 50V |
| C125 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C126 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C127 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C128 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| D001 | 1SS132 | DIODE | | | |
| D002 | 1SS132 | DIODE | | | |
| D003 | 1SS132 | DIODE | | | |
| D004 | 1SS132 | DIODE | | | |
| D005 | 1SS132 | DIODE | | | |
| D006 | 1SS132 | DIODE | | | |
| D007 | 1SS132 | DIODE | | | |
| D008 | 1SS132 | DIODE | | | |
| D009 | 1SS132 | DIODE | | | |
| D010 | 1SS132 | DIODE | | | |
| D011 | 1SS132 | DIODE | | | |
| D012 | 1SS132 | DIODE | | | |
| D013 | 1SS132 | DIODE | | | |
| D014 | 1SS132 | DIODE | | | |
| D015 | 1SS132 | DIODE | | | |
| D016 | 1SS132 | DIODE | | | |
| D017 | NO USE | | | | |
| D018 | 1SS132 | DIODE | | | |
| D021 | 1SS132 | DIODE | | | |
| D022 | 1SS132 | DIODE | | | |
| D023 | 1SS132 | DIODE | | | |
| D024 | 1SS132 | DIODE | | | |
| D025 | MTZ7.5JA | DIODE ZENER | 9.6V | | |
| D026 | 1SS132 | DIODE | | | |
| D027 | 1SS132 | DIODE | | | |
| D028 | 1SS132 | DIODE | | | |
| D029 | 1SS132 | DIODE | | | |
| D030 | NO USE | | | | |
| D031 | 1SS132 | DIODE | | | |
| D032 | 1SS83 | DIODE | | | |
| D033 | 1SS83 | DIODE | | | |
| D034 | 1SS83 | DIODE | | | |
| D035 | 1SS132 | DIODE | | | |
| D036 | MTZ7.5JA | DIODE, ZENER | 9.6V | | |
| J005 | E31-2615-05 | LEAD WIRE WITH CONNECTOR | | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| J025 | E31-2669-05 | LEAD WIRE WITH CONNECTOR |
| J026 | E31-2671-05 | LEAD WIRE WITH CONNECTOR |
| *J031 | E31-2677-05 | LEAD WIRE WITH CONNECTOR |
| J034 | E31-2699-05 | LEAD WIRE WITH CONNECTOR |
| J043 | E31-2707-05 | LEAD WIRE WITH CONNECTOR |
| L001 | L40-6801-03 | FERRI INDUCTOR 68UH |
| L002 | L40-4701-03 | FERRI INDUCTOR 47UH |
| L003 | L40-4701-03 | FERRI INDUCTOR 47UH |
| P002 | E40-0374-05 | PIN CONNECTOR 3 P |
| P007 | E40-0273-05 | PIN CONNECTOR 2 P |
| P008 | E40-0273-05 | PIN CONNECTOR 2 P |
| P009 | E40-0874-05 | PIN CONNECTOR 8P |
| P010 | E40-0273-05 | PIN CONNECTOR 2 P |
| P011 | E40-0373-05 | PIN CONNECTOR 3 P |
| P012 | NO USE | |
| P013 | E40-1373-05 | PIN CONNECTOR 13 P |
| P014 | NO USE | |
| P015 | E40-0373-05 | PIN CONNECTOR 3 P |
| P018 | E40-0273-05 | PIN CONNECTOR 2 P |
| P025 | E40-0573-05 | PIN CONNECTOR 5 P |
| P026 | E40-0873-05 | PIN CONNECTOR 8 P |
| P027 | E40-0573-05 | PIN CONNECTOR 5 P |
| P031 | E40-0573-05 | PIN CONNECTOR 5 P |
| Q001 | 2SK241(Y) | FET, N-CHANNEL |
| Q002 | 2SK241(Y) | FET, N-CHANNEL |
| Q003 | 2SC2786(K) | TR. SI, NPN |
| Q004 | 2SA1005(K) | TR. SI, PNP |
| Q005 | 2SC2785(F) | TR. SI, NPN |
| Q006 | 2SC1215(S,T) | TR, SI, NPN |
| Q007 | 2SC1215(S,T) | TR, SI, NPN |
| Q008 | 2SC2785(F) | TR. SI, NPN |
| Q009 | 2SC2785(F) | TR. SI, NPN |
| Q010 | 2SC2786(K) | TR. SI, NPN |
| Q013 | 2SA1175(F) | TR. SI, PNP |
| Q014 | 2SA1005(K) | TR. SI, PNP |
| Q015 | 2SA1175(F) | TR. SI, PNP |
| Q016 | 2SK117(Y) | FET. P-CHANNEL |
| Q017 | 2SC2785(F) | TR. SI, NPN |
| Q018 | 2SA1175(F) | TR. SI, PNP |
| Q019 | 2SK117(GR) | FET. N-CHANNEL |
| Q020 | 2SC2785(F) | TR. SI, NPN |
| Q021 | 2SC2785(F) | TR. SI, NPN |
| Q022 | 2SA1175(F) | TR. SI, PNP |
| Q023 | 2SC2785(F) | TR. SI, NPN |
| Q024 | 2SA1175(F) | TR. SI, PNP |
| Q025 | 2SA1175(F) | TR. SI, PNP |
| Q026 | 2SA1005(K) | TR. SI, PNP |
| Q027 | 2SA1175(F) | TR. SI, PNP |
| Q028 | 2SK117(Y) | FET. P-CHANNEL |
| Q029 | 2SC2785(F) | TR. SI, NPN |
| Q030 | 2SA1175(F) | TR. SI, PNP |
| Q031 | 2SK117(GR) | FET. N-CHANNEL |
| Q032 | 2SA1175(F) | TR. SI, PNP |
| Q033 | 2SC3066(F,G) | TR. SI, NPN |
| Q034 | 2SC2785(F) | TR. SI, NPN |
| Q035 | 2SC2785(F) | TR. SI, NPN |
| Q036 | 2SC2785(F) | TR. SI, NPN |
| Q037 | 2SC2786(K) | TR. SI, NPN |
| Q038 | 2SC2786(K) | TR. SI, NPN |
| Q039 | 2SC2785(F) | TR. SI, NPN |
| Q040 | 2SC2785(F) | TR. SI, NPN |
| Q041 | 2SC2786(K) | TR. SI, NPN |
| Q042 | 2SC2785(F) | TR. SI, NPN |
| Q043 | 2SA1005(K) | TR. SI, PNP |
| Q044 | 2SK336 | FET. N-CHANNEL |
| Q045 | 2SK336 | FET. N-CHANNEL |
| Q046 | 2SA1005(K) | TR. SI, PNP |
| Q047 | 2SC2785(F) | TR. SI, NPN |
| Q048 | 2SC2785(F) | TR. SI, NPN |
| Q049 | 2SC2912(S) | TR. SI, NPN |
| Q050 | 2SC2912(S) | TR. SI, NPN |
| Q051 | 2SA1210(S) | TR. SI, PNP |
| Q052 | 2SA1210(S) | TR. SI, PNP |
| Q059 | 2SC2785(F) | TR. SI, NPN |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| Q060 | 2SA1175(F) | TR. SI, PNP |
| Q061 | 2SA1005(K) | TR. SI, PNP |
| Q062 | 2SC2786(K) | TR. SI, NPN |
| Q063 | 2SA1005(K) | TR. SI, PNP |
| Q064 | 2SC2785(F) | TR. SI, NPN |
| Q065 | 2SA1175(F) | TR. SI, PNP |
| Q066 | 2SA1005(K) | TR. SI, PNP |
| Q067 | 2SC2785(F) | TR. SI, NPN |
| Q068 | 2SA1175(F) | TR. SI, PNP |
| Q069 | 2SC2785(F) | TR. SI, NPN |
| Q070 | 2SC2785(F) | TR. SI, NPN |
| Q071 | 2SC2785(F) | TR. SI, NPN |
| R001 | RD14BB2C104J | RES. CARBON 100K 5% 1/6W |
| R002 | RD14BB2C914J | RES. CARBON 910K 5% 1/6W |
| R003 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R004 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R005 | RD14BB2C470J | RES. CARBON 47 5% 1/6W |
| R006 | RD14BB2C162J | RES. CARBON 1.6K 5% 1/6W |
| R007 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R008 | RD14BB2C332J | RES. CARBON 3.3K 5% 1/6W |
| R009 | RD14BB2C331J | RES. CARBON 330 5% 1/6W |
| R010 | RD14BB2C911J | RES. CARBON 910 5% 1/6W |
| R011 | RN14BK2C9103F | RES. METAL FILM 910K 1% 1/6W |
| R012 | RN14BK2C9103F | RES. METAL FILM 910K 1% 1/6W |
| R013 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R014 | RD14BB2C152J | RES. CARBON 1.5K 5% 1/6W |
| R015 | RD14BB2C105J | RES. CARBON 1M 5% 1/6W |
| R016 | RD14BB2C473J | RES. CARBON 47K 5% 1/6W |
| R017 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R018 | RD14BB2C332J | RES. CARBON 3.3K 5% 1/6W |
| R019 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R020 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R021 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R022 | RD14BB2C912J | RES. CARBON 9.1K 5% 1/6W |
| R023 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R024 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R025 | RD14BB2C132J | RES. CARBON 1.3K 5% 1/6W |
| R026 | RD14BB2C132J | RES. CARBON 1.3K 5% 1/6W |
| R027 | RD14BB2C680J | RES. CARBON 68 5% 1/6W |
| R028 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R029 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R032 | RD14BB2C432J | RES. CARBON 4.3K 5% 1/6W |
| R033 | RD14BB2C511J | RES. CARBON 510 5% 1/6W |
| R036 | RD14BB2C431J | RES. CARBON 430 5% 1/6W |
| R037 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R038 | RD14BB2C223J | RES. CARBON 22K 5% 1/6W |
| R039 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R040 | NO USE | |
| R041 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R042 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R043 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R044 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R045 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R046 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R047 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R048 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R049 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R050 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R051 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R052 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R053 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R054 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R055 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R056 | RD14BB2C154J | RES. CARBON 150K 5% 1/6W |
| R057 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R058 | RD14BB2C103J | RES. CARBON 10K 5% 1/6W |
| R059 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R060 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R061 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R062 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R063 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R064 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R065 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R066 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R067 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R068 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R069 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R070 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R071 | RD14BB2C472J | RES. CARBON 4.7K 5% 1/6W |
| R072 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R073 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R074 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R075 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R076 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R077 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R078 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R079 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R080 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R081 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R082 | RD14BB2C221J | RES. CARBON | 220 | 5% | 1/6W |
| R083 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R084 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R085 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R086 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R087 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R088 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R089 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R090 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| R091 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R092 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R093 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R094 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R095 | RS14GB3A472J | RES. METAL FILM | 4.7K | 5% | 1W |
| R096 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R097 | RD14BB2C821J | RES. CARBON | 820 | 5% | 1/6W |
| R098 | RD14BB2C272J | RES. CARBON | 2.7K | 5% | 1/6W |
| R099 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R100 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R101 | RD14BB2C911J | RES. CARBON | 910 | 5% | 1/6W |
| R102 | RN14BK2H3004F | RES. METAL FILM | 3M | 1% | 1/2W |
| R103 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R104 | RN14BK2E5003F | RES. METAL FILM | 500K | 1% | 1/4W |
| R105 | RN14BK2E3003F | RES. METAL FILM | 300K | 1% | 1/4W |
| R106 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R107 | RN14BK2E4992F | RES. METAL FILM | 49.9K | 1% | 1/4W |
| R108 | R92-1066-05 | RES. FIXED | 29.8K | 1% | 1/4W |
| R109 | R92-1065-05 | RES. FIXED | 9.92K | 1% | 1/4W |
| R110 | R92-1064-05 | RES. FIXED | 4.95K | 1% | 1/4W |
| R111 | R92-1064-05 | RES. FIXED | 4.95K | 1% | 1/4W |
| R112 | RN14BK2C2202F | RES. METAL FILM | 22K | 1% | 1/6W |
| R113 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R114 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R115 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R116 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R117 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R118 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R119 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R120 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R121 | RD14BB2C221J | RES. CARBON | 220 | 5% | 1/6W |
| R122 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R123 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R124 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R125 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R126 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R127 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R128 | RS14GB3A472J | RES. METAL FILM | 4.7K | 5% | 1W |
| R129 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R130 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R131 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R132 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R133 | RN14BK2H3004F | RES. METAL FILM | 3M | 1% | 1/2W |
| R134 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R135 | RN14BK2E5003F | RES. METAL FILM | 500K | 1% | 1/4W |
| R136 | RN14BK2E3003F | RES. METAL FILM | 300K | 1% | 1/4W |
| R137 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R138 | RN14BK2E4992F | RES. METAL FILM | 49.9K | 1% | 1/4W |
| R139 | R92-1066-05 | RES. FIXED | 29.8K | 1% | 1/4W |
| R140 | R92-1065-05 | RES. FIXED | 9.92K | 1% | 1/4W |
| R141 | R92-1064-05 | RES. FIXED | 4.95K | 1% | 1/4W |
| R142 | R92-1064-05 | RES. FIXED | 4.95K | 1% | 1/4W |
| R143 | RN14BK2C2202F | RES. METAL FILM | 22K | 1% | 1/6W |
| R144 | RN14BK2C2002F | RES. METAL FILM | 20K | 1% | 1/6W |
| R145 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R146 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R147 | RD14BB2C113J | RES. CARBON | 11K | 5% | 1/6W |
| R148 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R149 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R150 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R151 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R152 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R153 | RD14BB2C361J | RES. CARBON | 360 | 5% | 1/6W |
| R154 | RD14BB2C822J | RES. CARBON | 8.2K | 5% | 1/6W |
| R155 | RD14BB2C152J | RES. CARBON | 1.5K | 5% | 1/6W |
| R156 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R157 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R158 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R159 | RD14BB2C163J | RES. CARBON | 16K | 5% | 1/6W |
| R160 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R161 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R162 | RD14BB2C432J | RES. CARBON | 4.3K | 5% | 1/6W |
| R163 | RD14BB2C152J | RES. CARBON | 1.5K | 5% | 1/6W |
| R164 | NO USE | | | | |
| R165 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R166 | RD14BB2C432J | RES. CARBON | 4.3K | 5% | 1/6W |
| R167 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R168 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R169 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R170 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R171 | NO USE | | | | |
| R172 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R173 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R174 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R175 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R176 | RD14BB2C273J | RES. CARBON | 27K | 5% | 1/6W |
| R177 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R178 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R179 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R180 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R181 | RN14BK2C3301F | RES. METAL FILM | 3.3K | 1% | 1/6W |
| R182 | RN14BK2C3301F | RES. METAL FILM | 3.3K | 1% | 1/6W |
| R183 | RD14BB2C271J | RES. CARBON | 270 | 5% | 1/6W |
| R184 | RD14BB2C271J | RES. CARBON | 270 | 5% | 1/6W |
| R185 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R186 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R187 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R188 | RN14BK2E6802F | RES. METAL FILM | 68K | 1% | 1/4W |
| R189 | RN14BK2E6802F | RES. METAL FILM | 68K | 1% | 1/4W |
| R190 | RN14BK2C1001F | RES. METAL FILM | 1K | 1% | 1/6W |
| R191 | RN14BK2C1001F | RES. METAL FILM | 1K | 1% | 1/6W |
| R192 | RD14DB3A183J | RES. CARBON | 18K | 5% | 1W |
| R193 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R194 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R195 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R196 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R197 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R198 | RD14BB2C183J | RES. CARBON | 18K | 5% | 1/6W |
| R199 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R200 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R207 | RD14BB2C820J | RES. CARBON | 82 | 5% | 1/6W |
| R208 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R209 | RD14BB2C331J | RES. CARBON | 330 | 5% | 1/6W |
| R210 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R211 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R212 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| R213 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R214 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R215 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R216 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R217 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R218 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R219 | RD14BB2C223J | RES. CARBON | 22K | 5% | 1/6W |
| R220 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R221 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R222 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R223 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R224 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R225 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R226 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R227 | RD14BB2C133J | RES. CARBON | 13K | 5% | 1/6W |
| R228 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R229 | RD14BB2C394J | RES. CARBON | 390K | 5% | 1/6W |
| R230 | RD14BB2C333J | RES. CARBON | 33K | 5% | 1/6W |
| R231 | RD14BB2C244J | RES. CARBON | 240K | 5% | 1/6W |
| R232 | RD14BB2C820J | RES. CARBON | 82 | 5% | 1/6W |
| R233 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R234 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R235 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R236 | RD14BB2C301J | RES. CARBON | 300 | 5% | 1/6W |
| R237 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R238 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R239 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R240 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R241 | RD14BB2C122J | RES. CARBON | 1.2K | 5% | 1/6W |
| R242 | RD14BB2C122J | RES. CARBON | 1.2K | 5% | 1/6W |
| R243 | RD14BB2C151J | RES. CARBON | 150 | 5% | 1/6W |
| R244 | RD14BB2C362J | RES. CARBON | 3.6K | 5% | 1/6W |
| R245 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R246 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R247 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R248 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R249 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R250 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R251 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R252 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R253 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R254 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R255 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R256 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| R257 | RN14BK2C6800F | RES. METAL FILM | 680 | 1% | 1/6W |
| R258 | RN14BK2C1601F | RES. METAL FILM | 1.6K | 1% | 1/6W |
| R259 | RN14BK2C5100F | RES. METAL FILM | 510 | 1% | 1/6W |
| R260 | RD14BB2C202J | RES. CARBON | 2K | 5% | 1/6W |
| R261 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R262 | NO USE | | | | |
| R263 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R264 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R265 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R266 | RD14BB2C105J | RES. CARBON | 1M | 5% | 1/6W |
| R267 | RD14BB2C622J | RES. CARBON | 6.2K | 5% | 1/6W |
| R268 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R269 | RD14BB2C134J | RES. CARBON | 130K | 5% | 1/6W |
| R270 | RD14BB2C181J | RES. CARBON | 180 | 5% | 1/6W |
| R271 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R272 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R273 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R274 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R275 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R276 | RD14BB2C103J | RES. CARBON | 10K | 5% | 1/6W |
| R277 | RD14BB2C912J | RES. CARBON | 9.1K | 5% | 1/6W |
| R278 | NO USE | | | | |
| R279 | RD14BB2C203J | RES. CARBON | 20K | 5% | 1/6W |
| R280 | RD14BB2C622J | RES. CARBON | 6.2K | 5% | 1/6W |
| R281 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R282 | RD14BB2C471J | RES. CARBON | 470 | 5% | 1/6W |
| R283 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R284 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R285 | RD14BB2C183J | RES. CARBON | 18K | 5% | 1/6W |
| R286 | NO USE | | | | |
| R287 | RD14BB2C472J | RES. CARBON | 4.7K | 5% | 1/6W |
| R288 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R289 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| S001 | S32-4008-05 | LEVER SWITCH | | | |
| S002 | S33-4503-05 | LEVER SWITCH | | | |
| S003 | S01-5504-05 | ROTARY SWITCH | | | |
| S004 | S37-2005-05 | LEVER SWITCH | | | |
| S005 | S37-2005-05 | LEVER SWITCH | | | |
| S006 | S33-2501-05 | LEVER SWITCH | | | |
| TC001 | C05-0445-05 | CAP. TRIMMER | 20P | | |
| TC002 | C05-0445-05 | CAP. TRIMMER | 20P | | |
| TC003 | NO USE | | | | |
| TC004 | C05-0445-05 | CAP. TRIMMER | 20P | | |
| TC005 | C05-0445-05 | CAP. TRIMMER | 20P | | |
| U001 | TL082CP | IC, OP AMP | | | |
| U002 | MC14081BCP | IC, QUAL 2-INPUT AND GATE | | | |
| U003 | MC10105L | IC DIGITAL | | | |
| U004 | MC10107L | IC, QUAD 2-INPUT EXC OR/NOR | | | |
| U005 | MC10103L | IC, QUAD 2-INPUT OR GATE | | | |
| U006 | MC10131L | IC, DUAL D-FFS | | | |
| U007 | MC10104L | IC, QUAD 2-INPUT AND GATE | | | |
| U008 | MC10105L | IC DIGITAL | | | |
| U009 | MC10103L | IC, QUAD 2-INPUT OR GATE | | | |
| U010 | MC10102L | IC, QUAD 2-INPUT NOR GATE | | | |
| U011 | SN74LS112AN | IC, DUAL JK-FF | | | |
| U012 | SN74LS10N | IC, TRPLE 3-INPUT NAND GATE | | | |
| U013 | SN74LS00N | IC, QUAD 2-INPUT NAND GATE | | | |
| U014 | SN74LS08N | IC, QUAD 2-INPUT AND GATE | | | |
| U015 | SN74LS08N | IC, QUAD 2-INPUT AND GATE | | | |
| U016 | SN74LS257AN | IC, QUAD DATE SELECTORS | | | |
| U017 | SN74LS32N | IC, QUAD 2-INPUT OR GATE | | | |
| U018 | SN74LS112AN | IC, DUAL JK-FF | | | |
| VR001 | R12-0563-05 | RES. SEMI FIXED 500 B | | | |
| VR002 | R12-0563-05 | RES. SEMI FIXED 500 B | | | |
| VR003 | R23-9503-05 | V.R. | 10K/20K | | |
| VR004 | R12-0563-05 | RES. SEMI FIXED 500 B | | | |
| VR005 | R12-2517-05 | RES. SEMI FIXED 10K B | | | |
| VR006 | R12-3536-05 | RES. SEMI FIXED 10K B | | | |
| VR007 | R12-2517-05 | RES. SEMI FIXED 10K B | | | |
| VR008 | R12-0562-05 | RES. SEMI FIXED 200 B | | | |
| VR009 | R12-1528-05 | RES. SEMI FIXED 1K B | | | |
| VR010 | R12-2517-05 | RES. SEMI FIXED 10K B | | | |
| VR011 | R12-1528-05 | RES. SEMI FIXED 1K B | | | |
| VR012 | R01-1515-05 | V.R. | 1K | | |
| VR013 | R12-3537-05 | RES. SEMI FIXED 20K B | | | |
| VR014 | R01-3514-05 | V.R. | 20K | | |
| VR015 | R23-3501-05 | V.R. | 10K X2 | | |
| VR016 | R12-3536-05 | RES. SEMI FIXED 10K B | | | |
| VR017 | R23-9503-05 | V.R. | 10K/20K | | |
| VR018 | R23-3501-05 | V.R. | 10K X2 | | |
| VR019 | R10-9505-05 | V.R. | 1K/200K | | |
| VR020 | R10-9505-05 | V.R. | 1K/200K | | |

## HIGH VOLTAGE UNIT

### X68-1460-00

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E31-2170-05 | JUMPING WIRE | | | |
| | F01-0813-05 | HEAT SINK | | | |
| | F15-0727-04 | HOLDER (NEON TUBE) | | | |
| | J25-5101-03 | PCB (UNMOUNTED) | | | |
| | N30-3006-46 | SCREW, PAN HD | M 3X6 | | |
| C001 | CC45CH1H070D | CAP. CERAMIC | 7P | 0.5P | 50V |
| C002 | CC45CH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C003 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25% | 500V |
| C004 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25% | 500V |
| C005 | CC45CH2H050C | CAP. CERAMIC | 5P | 0.25P | 500V |
| C006 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25% | 500V |
| C007 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C008 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C009 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C010 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C011 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C012 | NO USE | | | | |
| C013 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C014 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C015 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C016 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C017 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C018 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C019 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C020 | CK45E3D102P | CAP. CERAMIC | 1000P | | 2K |
| C021 | CQ92FM1H154K | CAP. MYLAR | 0.15 | 10% | 50V |
| C022 | CQ92FM1H154K | CAP. MYLAR | 0.15 | 10% | 50V |
| C023 | NO USE | | | | |
| C024 | CQ92FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C025 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C026 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C027 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C028 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C029 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C030 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C031 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C032 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C033 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C034 | CE04W2C3R3 | CAP. ELECTRO | 3.3 | | 160V |
| C035 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| D001 | 1SS132 | DIODE | | | |
| D002 | NO USE | | | | |
| D003 | 1SS132 | DIODE | | | |
| D004 | 1SS83 | DIODE | | | |
| D005 | 1SS83 | DIODE | | | |
| D006 | 1SR35-200 | DIODE | | | |
| D007 | 1SR35-200 | DIODE | | | |
| D008 | 1SS83 | DIODE | | | |
| D009 | 1SS83 | DIODE | | | |
| D010 | 1SR35-200 | DIODE | | | |
| D011 | 1SS132 | DIODE | | | |
| D012 | 1SS132 | DIODE | | | |
| D013 | 1SS132 | DIODE | | | |
| D014 | 1SR35-200 | DIODE | | | |
| L001 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L002 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| NL001 | NE-2B | NEON LAMP | | | |
| NL002 | NE-2B | NEON LAMP | | | |
| NL003 | NE-2B | NEON LAMP | | | |
| NL004 | NE-2B | NEON LAMP | | | |
| P001 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P004 | E40-0332-05 | PIN CONNECTOR | 3 P | | |
| P011 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P020 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P024 | E40-0332-05 | PIN CONNECTOR | 3 P | | |
| P032 | E40-0873-05 | PIN CONNECTOR | 8 P | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| P039 | E40-0703-05 | PIN CONNECTOR 7 P | | | |
| Q001 | 2SA1208(S) | TR. SI, PNP | | | |
| Q002 | 2SC2910(S) | TR. SI, NPN | | | |
| Q003 | 2SA1210(S) | TR. SI, PNP | | | |
| Q004 | 2SA1005(K) | TR. SI, PNP | | | |
| Q005 | 2SC2912(S) | TR. SI, NPN | | | |
| Q006 | 2SA1175(F) | TR. SI, PNP | | | |
| Q007 | 2SD613(E) | TR. SI, NPN | | | |
| Q008 | 2SC2271(D) | TR. SI, NPN | | | |
| Q009 | NO USE | | | | |
| R001 | RD14DB2H103J | RES. CARBON | 10K | 5% | 1/2W |
| R002 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R003 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R004 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R005 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R006 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R007 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R008 | RD14BB2C152J | RES. CARBON | 1.5K | 5% | 1/6W |
| R009 | RD14BB2C124J | RES. CARBON | 120K | 5% | 1/6W |
| R010 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R011 | RD14BB2C751J | RES. CARBON | 750 | 5% | 1/6W |
| R012 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R013 | RD14BB2C124J | RES. CARBON | 120K | 5% | 1/6W |
| R014 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R015 | RD14BB2C752J | RES. CARBON | 7.5K | 5% | 1/6W |
| R016 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R017 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R018 | RD14BB2C470J | RES. CARBON | 47 | 5% | 1/6W |
| R019 | RD14BB2E334J | RES. CARBON | 330K | 5% | 1/4W |
| R020 | R92-1034-05 | RES. METAL FILM | 47M | 5% | 1/2W |
| R021 | RD14BB2E334J | RES. CARBON | 330K | 5% | 1/4W |
| R022 | R92-1034-05 | RES. METAL FILM | 47M | 5% | 1/2W |
| R023 | R92-1165-05 | RES. FIXED | 6.8M | | |
| R024 | R92-1154-05 | RES. FIXED | 11M | | |
| R029 | RN14BK2C1003F | RES. METAL FILM | 100K | 1% | 1/6W |
| R030 | R92-1125-05 | RES. FIXED | 7.5M | | |
| R031 | R92-1125-05 | RES. FIXED | 7.5M | | |
| R035 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| R036 | NO USE | | | | |
| R037 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R038 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R039 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R040 | RD14BB2C563J | RES. CARBON | 56K | 5% | 1/6W |
| R041 | RD14BB2C563J | RES. CARBON | 56K | 5% | 1/6W |
| R042 | RD14BB2C133J | RES. CARBON | 13K | 5% | 1/6W |
| R043 | RD14BB2C273J | RES. CARBON | 27K | 5% | 1/6W |
| R044 | RD14BB2C104J | RES. CARBON | 100K | 5% | 1/6W |
| U001 | NJM4558D | IC | | | |
| VR001 | R12-5525-05 | RES. SEMI FIXED | 100K | B | |

## CRT SOCKET UNIT

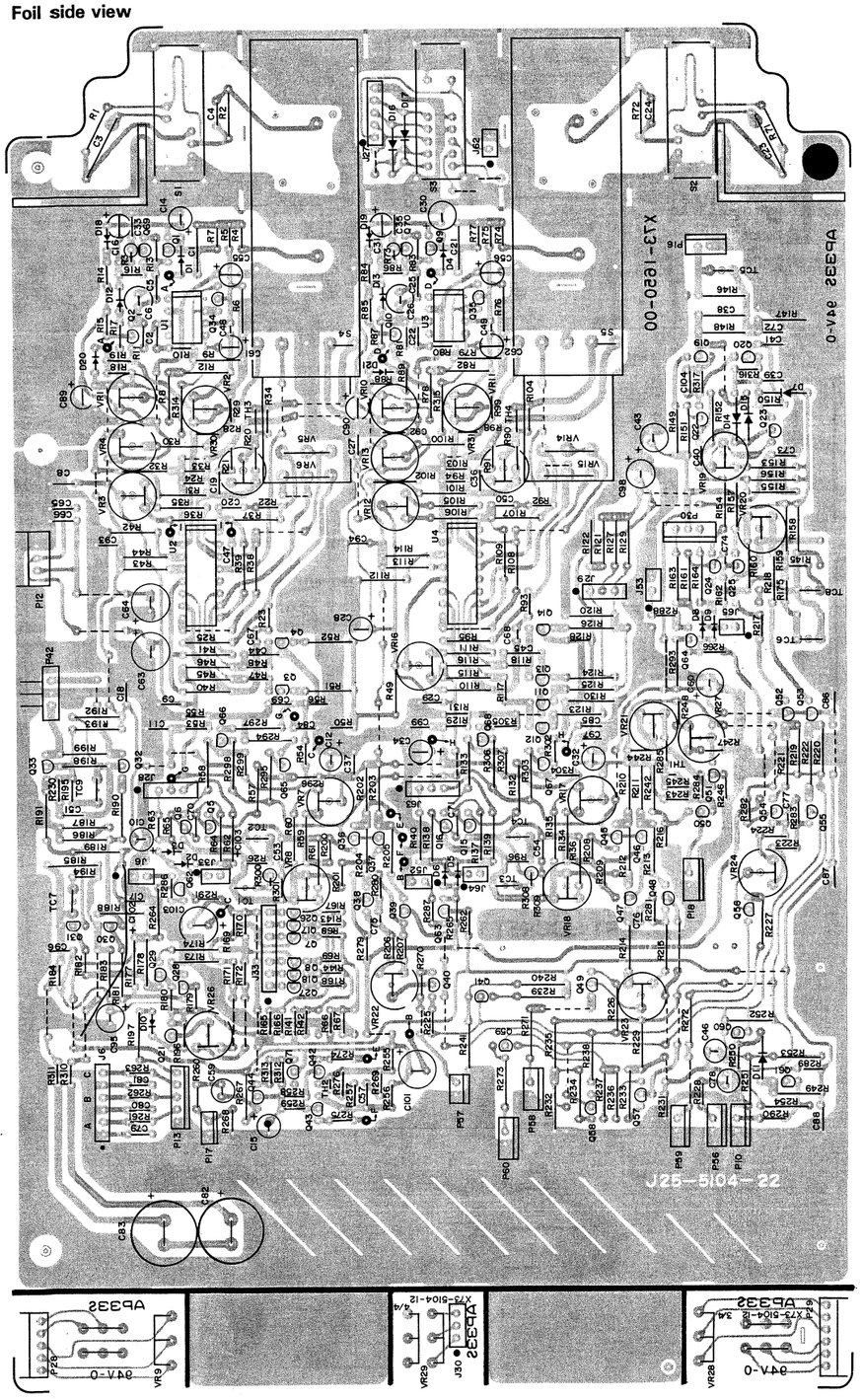
### X81-1600-00

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E01-0103-05 | CRT SOCKET | | | |
| | E23-0503-05 | TERMINAL | | | |
| | J25-5102-04 | PCB (UNMOUNTED) | | | |
| C001 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C002 | CC45CH1H010C | CAP. CERAMIC | 1P | 0.25P | 50V |
| J001 | E31-2611-05 | LEAD WIRE WITH CONNECTOR | | | |
| J002 | E31-2612-05 | LEAD WIRE WITH CONNECTOR | | | |
| J003 | NO USE | | | | |
| J004 | E31-2614-05 | LEAD WIRE WITH CONNECTOR | | | |
| R003 | RD14BB2C6R8J | RES. CARBON | 6.8 | 5% | 1/6W |
| R004 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |

# P.C. BOARD

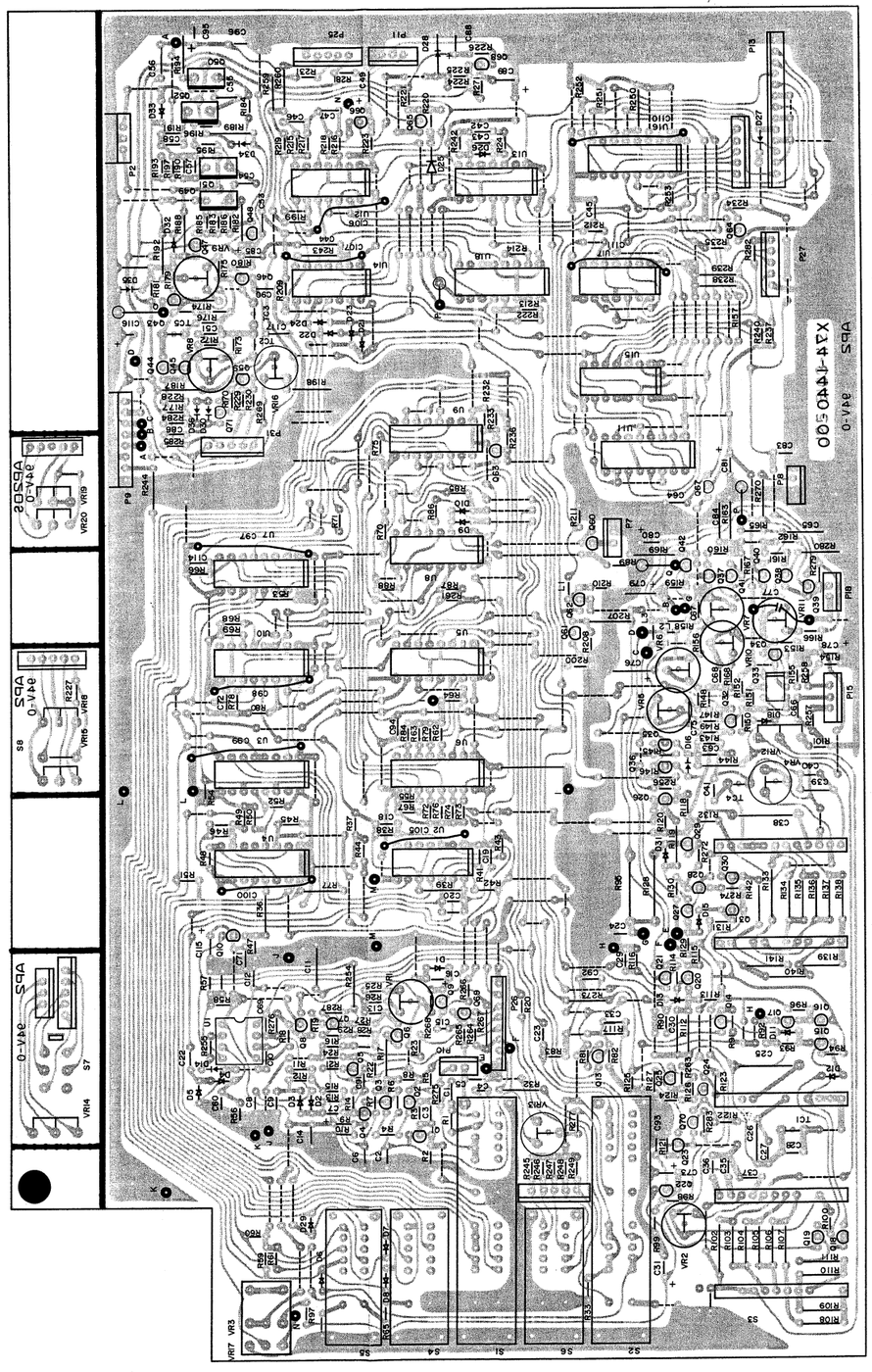
## VERTICAL PREAMP UNIT (X73-1650)

**Foil side view**




## SWEEP UNIT (X74-1440)

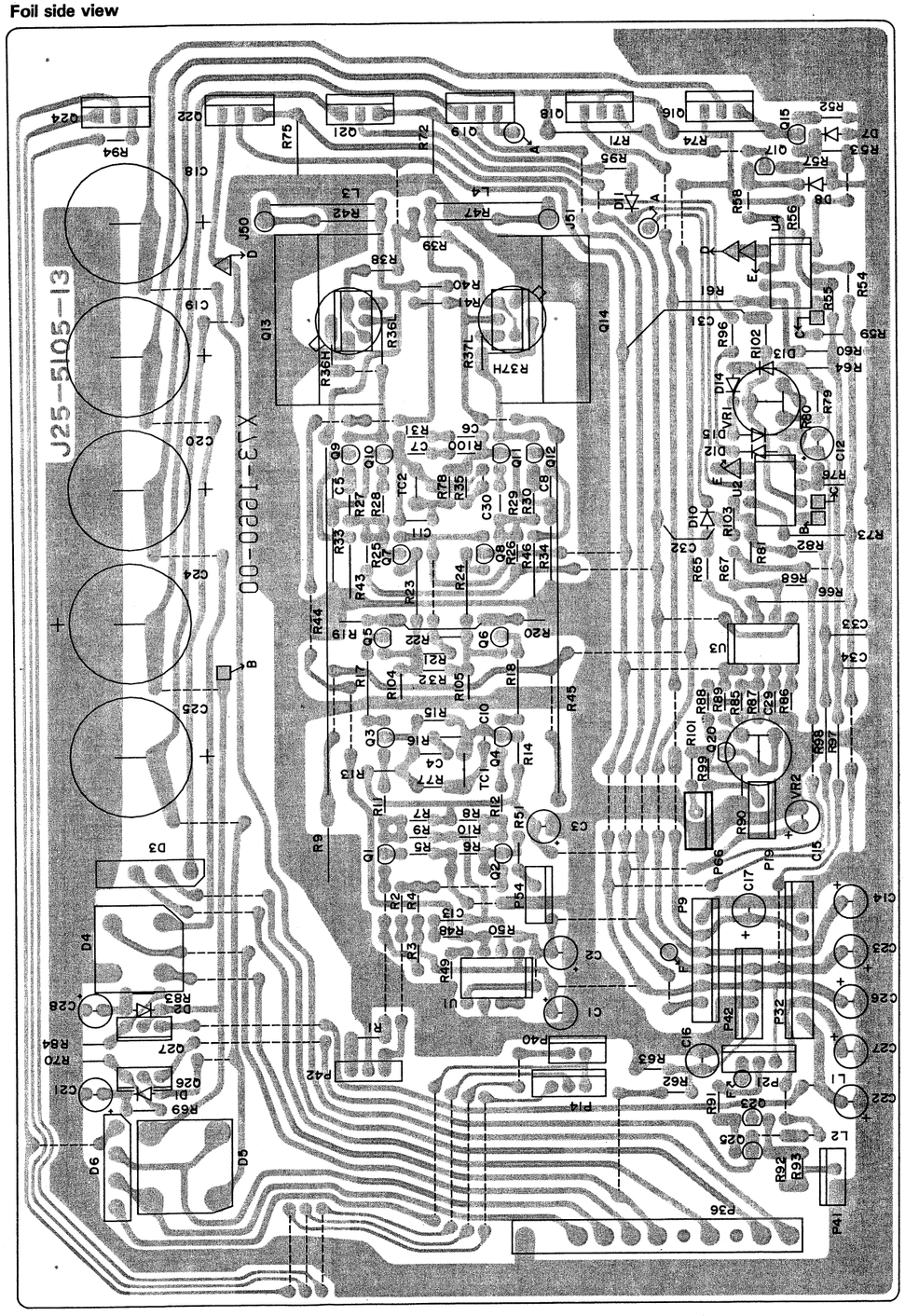
**Foil side view**



# P.C. BOARD

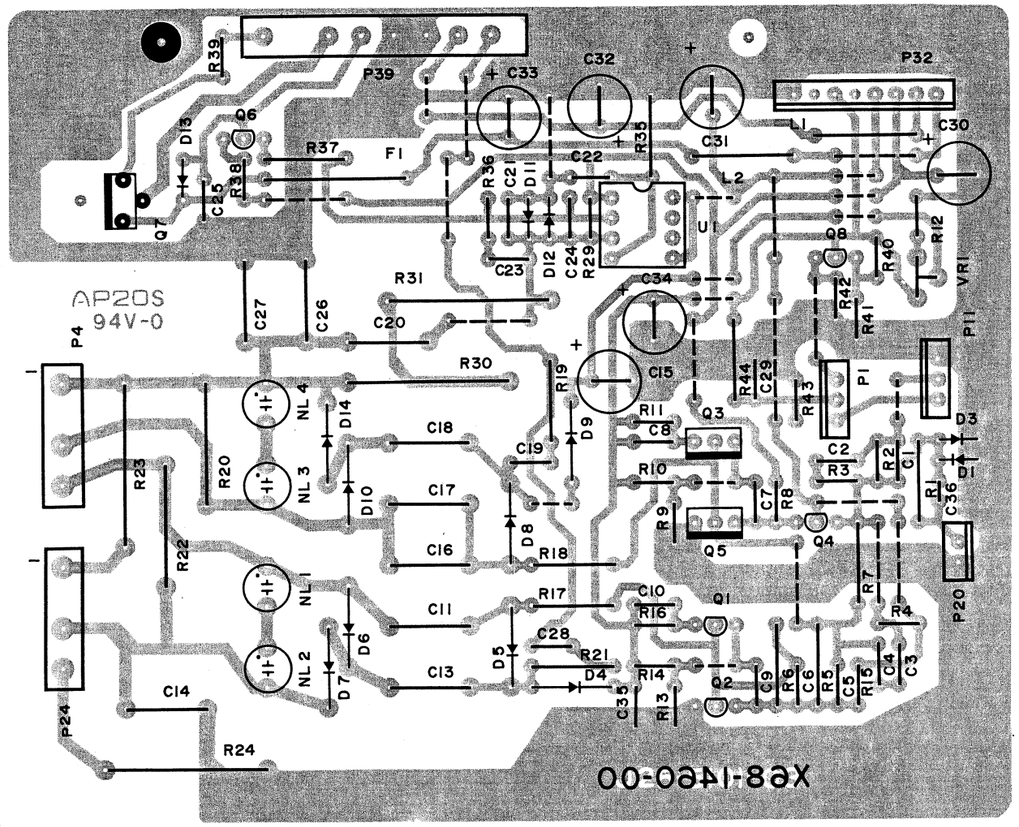
## POWER & FINAL AMP UNIT (X73-1660)

**Foil side view**



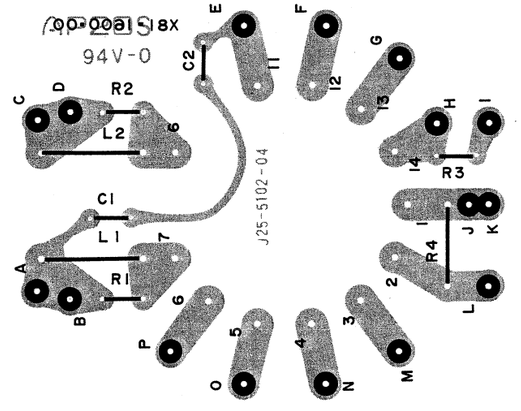

## HIGH VOLTAGE UNIT (X68-1460)

**Foil side view**



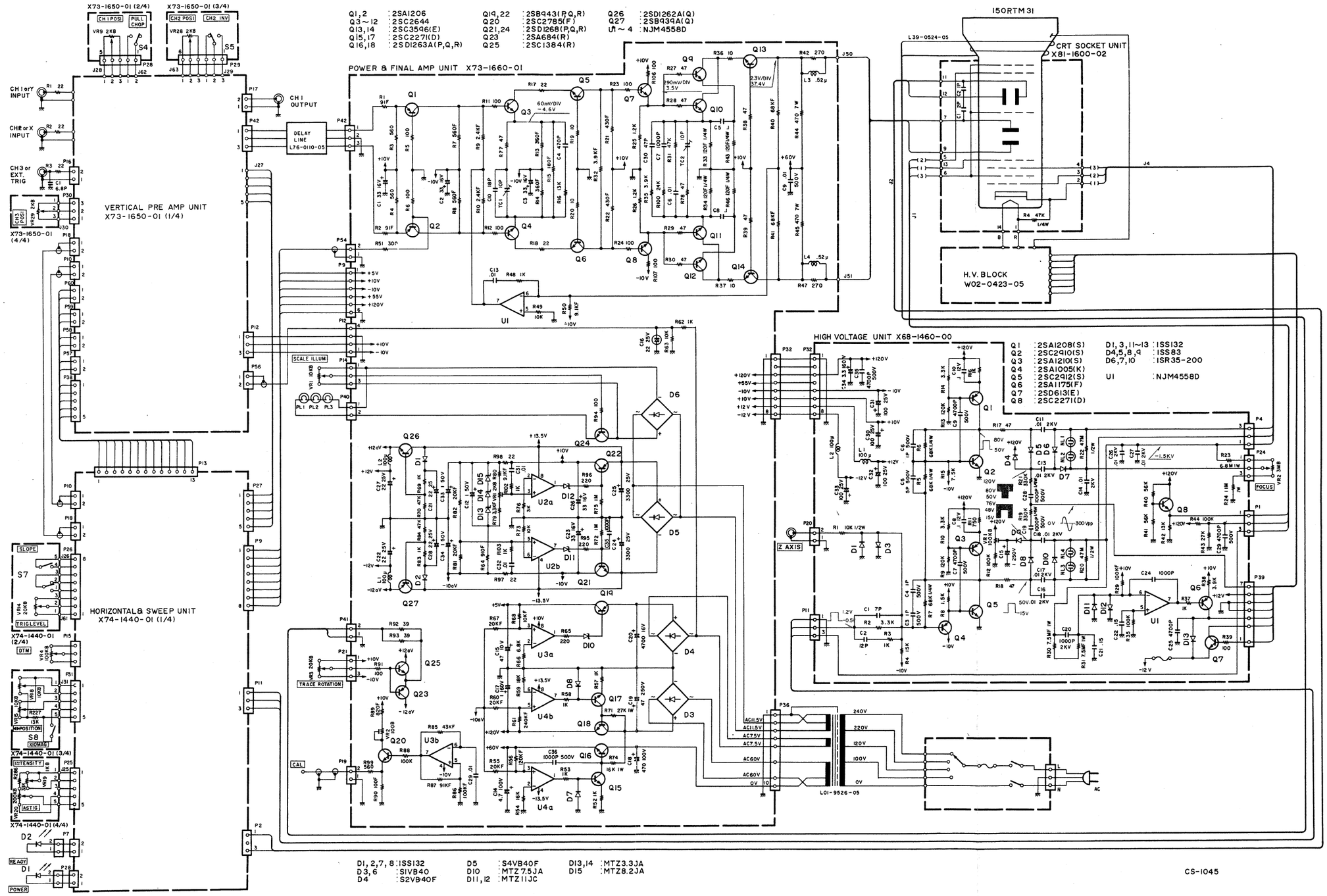

## CRT SOCKET UNIT (X81-1600)

**Foil side view**



# SCHEMATIC DIAGRAM

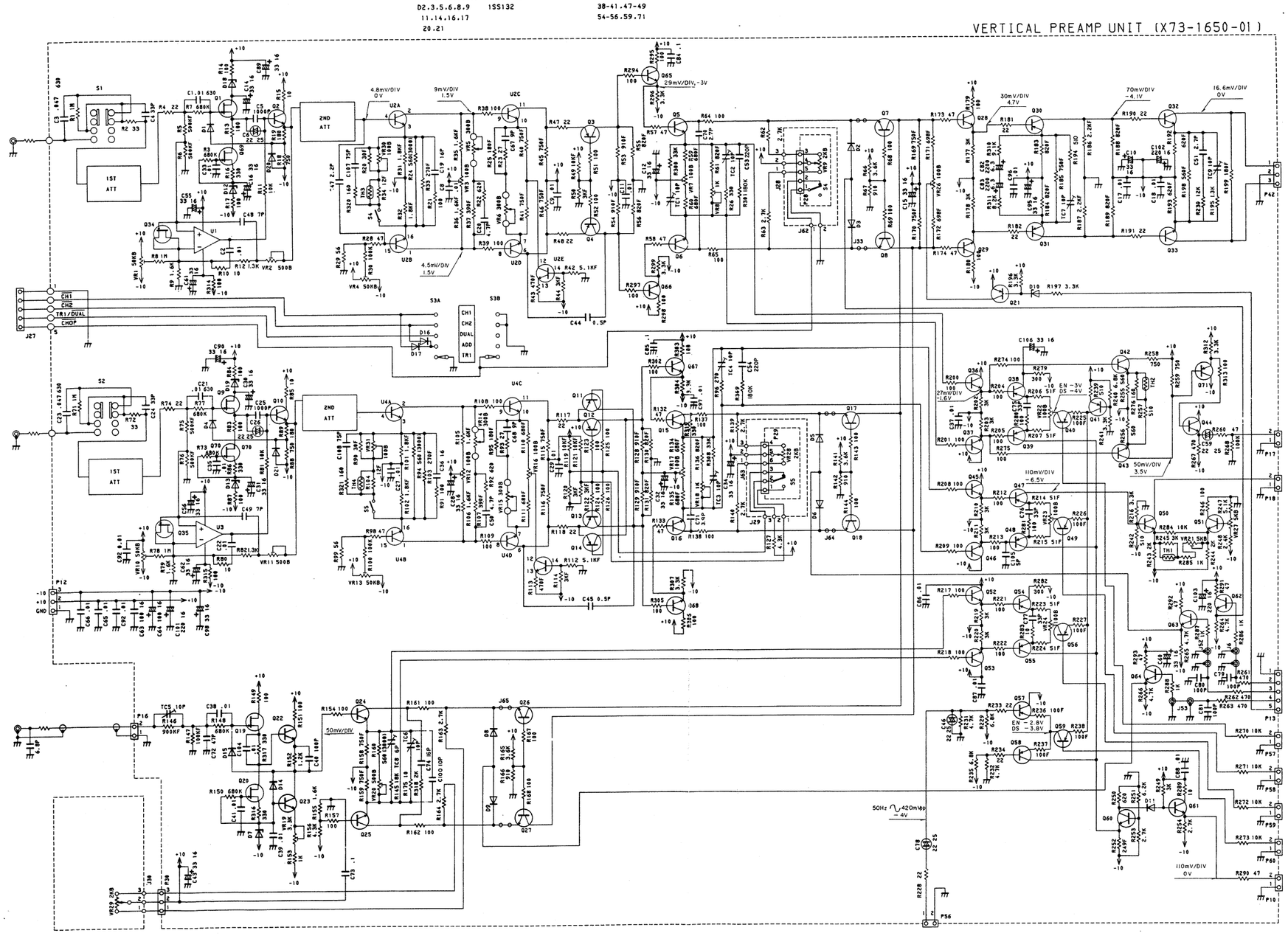
## CS-1045



# SCHEMATIC DIAGRAM

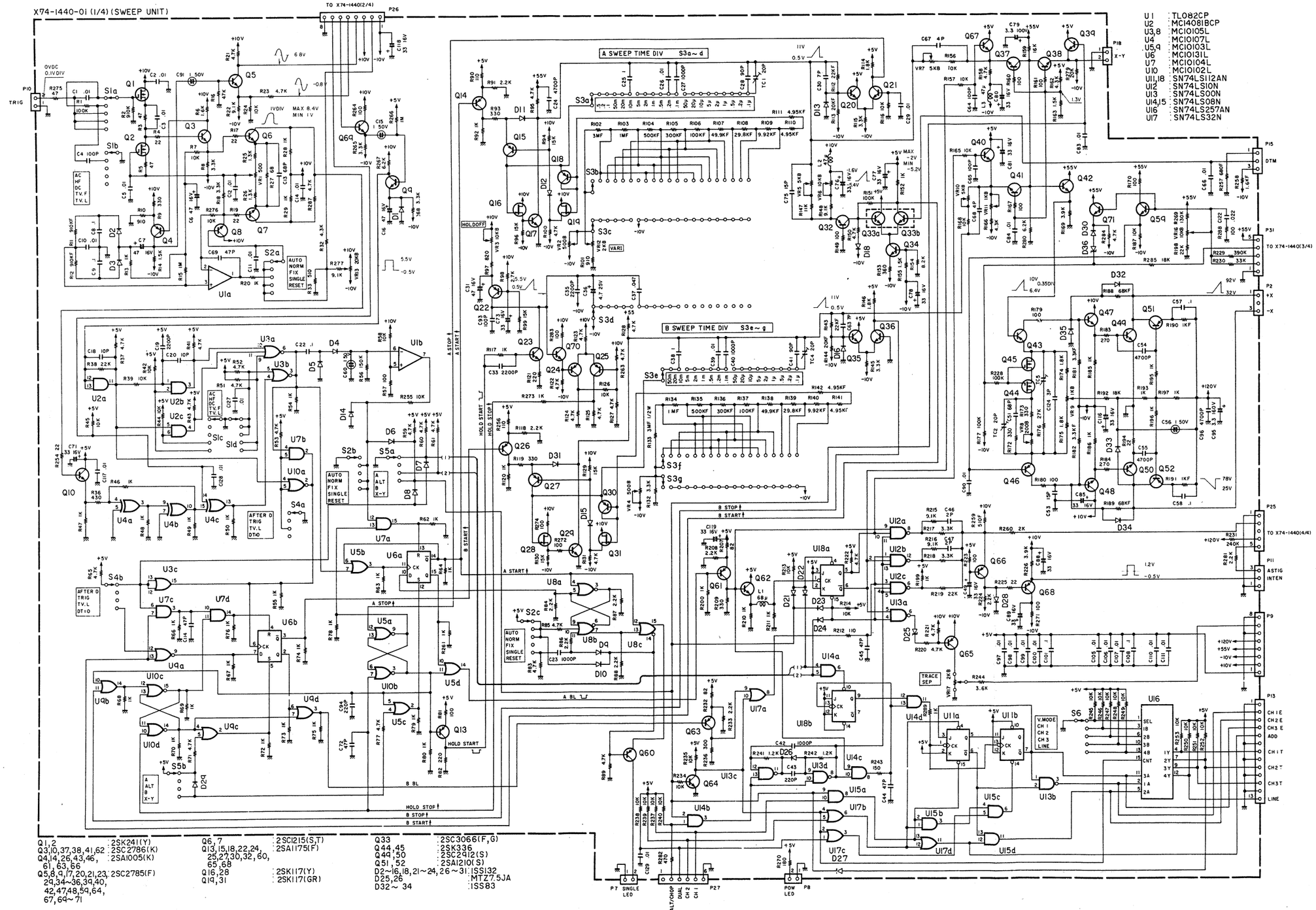
## CS-1045

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| TH1 | SDT-1000 | U1.3 | LF411CN | Q1.9.19.20.69.70 | 2SK304(F) | Q32.33 | 2SC2644 | Q5-8.15-18.24-27 | 2SC3354(S.T) |
| TH2-4 | SDT-100 | U2.4 | CA3127E | Q34.35 | 2SK184(T) | Q50.51.62-64 | 2SC2785(F) | 42.43.60.61 | |
| | | D1.4.15 | 1S1544A | Q57.58 | 2SA1175(F) | Q2.10.22.23.28 | 2SC3315(D) | | |
| | | D10 | MTZ7.5JC | Q30.31 | 2SA1206 | 29.36.37.45.46 | | Q44 | 2SC1973 |
| | | D7.12.13.18.19 | MTZ5.1JB | Q3.4.11-14.21 | 2SA1005(K) | 52.53.65-68 | | | |
| | | D2.3.5.6.8.9 | 1SS132 | 38-41.47-49 | | | | | |
| | | 11.14.16.17 | | 54-56.59.71 | | | | | |
| | | 20.21 | | | | | | | |



# SCHEMATIC DIAGRAM

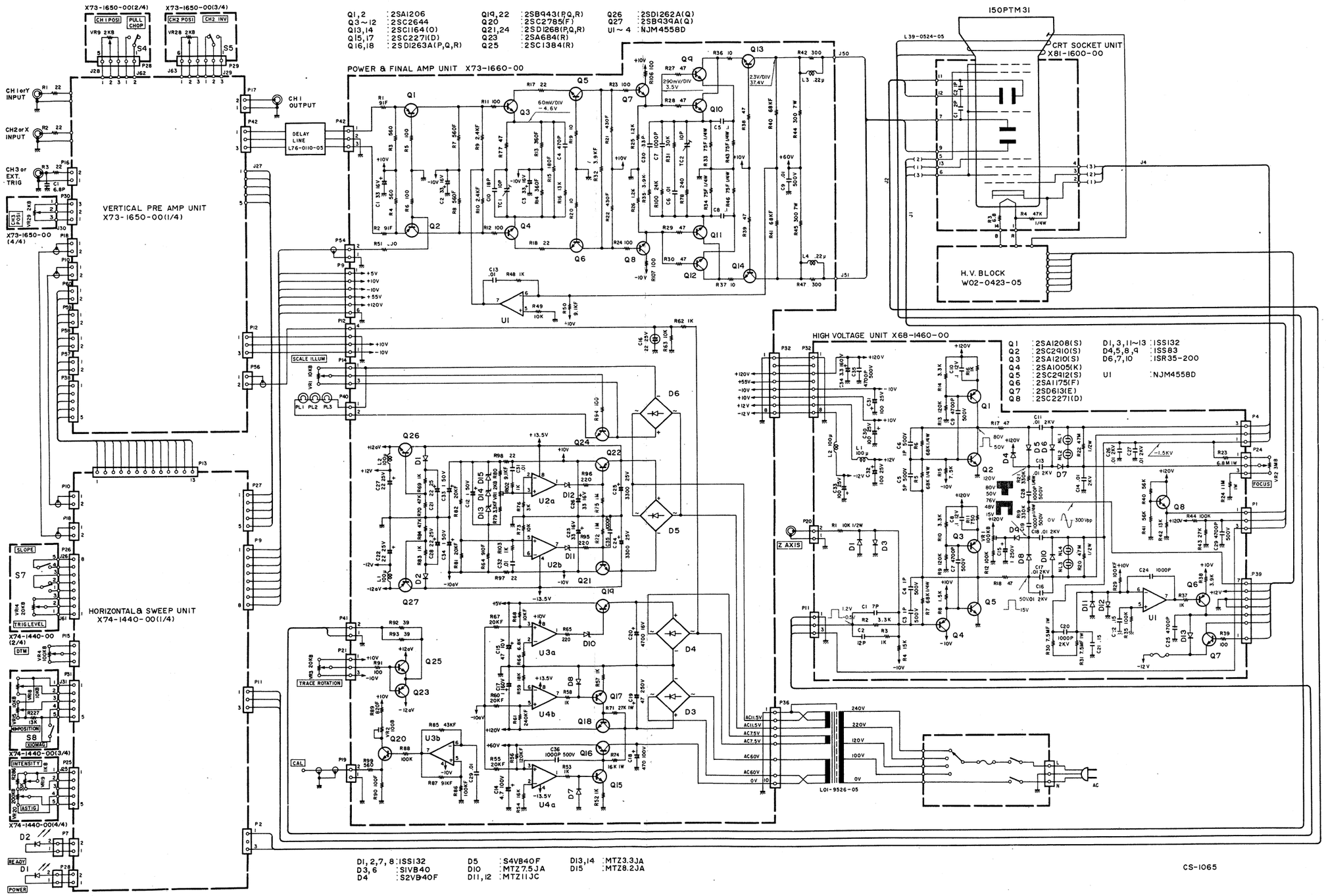
## CS-1045




| | | | | | |
|---|---|---|---|---|---|
| Q1,2 | :2SK241(Y) | Q6,7 | :2SC1215(S,T) | Q33 | :2SC3066(F,G) |
| Q3,10,37,38,41,62 | :2SC2786(K) | Q13,15,18,22,24, 25,27,30,32,60, 65,68 | :2SA1175(F) | Q44,45 | :2SK336 |
| Q4,14,26,43,46, 61,63,66 | :2SA1005(K) | | | Q49,50 | :2SC2412(S) |
| Q5,8,9,17,20,21,23, 29,34~36,39,40, 42,47,48,54,64, 67,69~71 | :2SC2785(F) | Q16,28 | :2SK117(Y) | Q51,52 | :2SA1210(S) |
| | | Q19,31 | :2SK117(GR) | D2~16,18,21~24,26~31 | :1SS132 |
| | | | | D25,26 | :MTZ7.5JA |
| | | | | D32~34 | :1SS83 |

# SCHEMATIC DIAGRAM

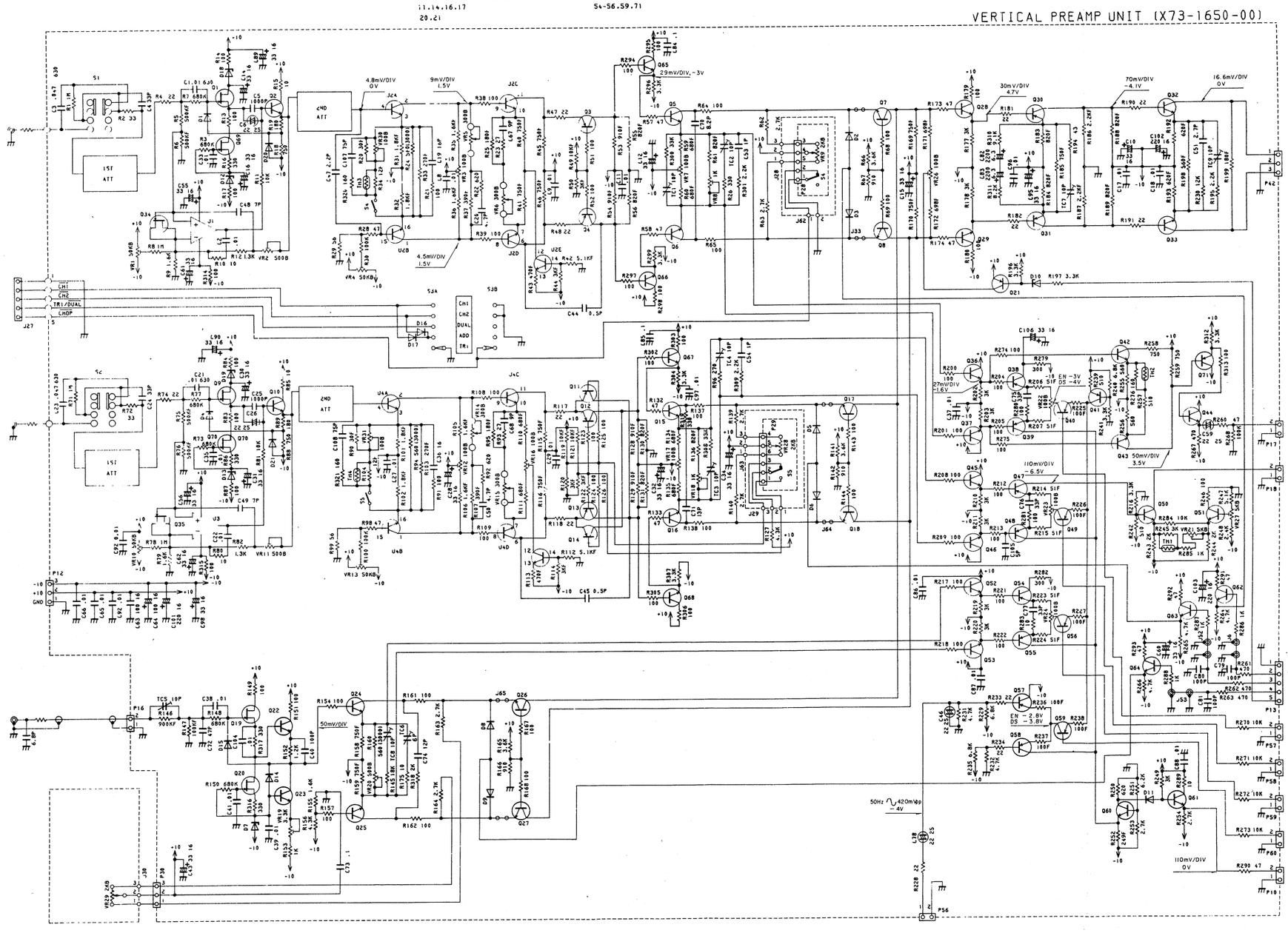
## CS-1065



# SCHEMATIC DIAGRAM

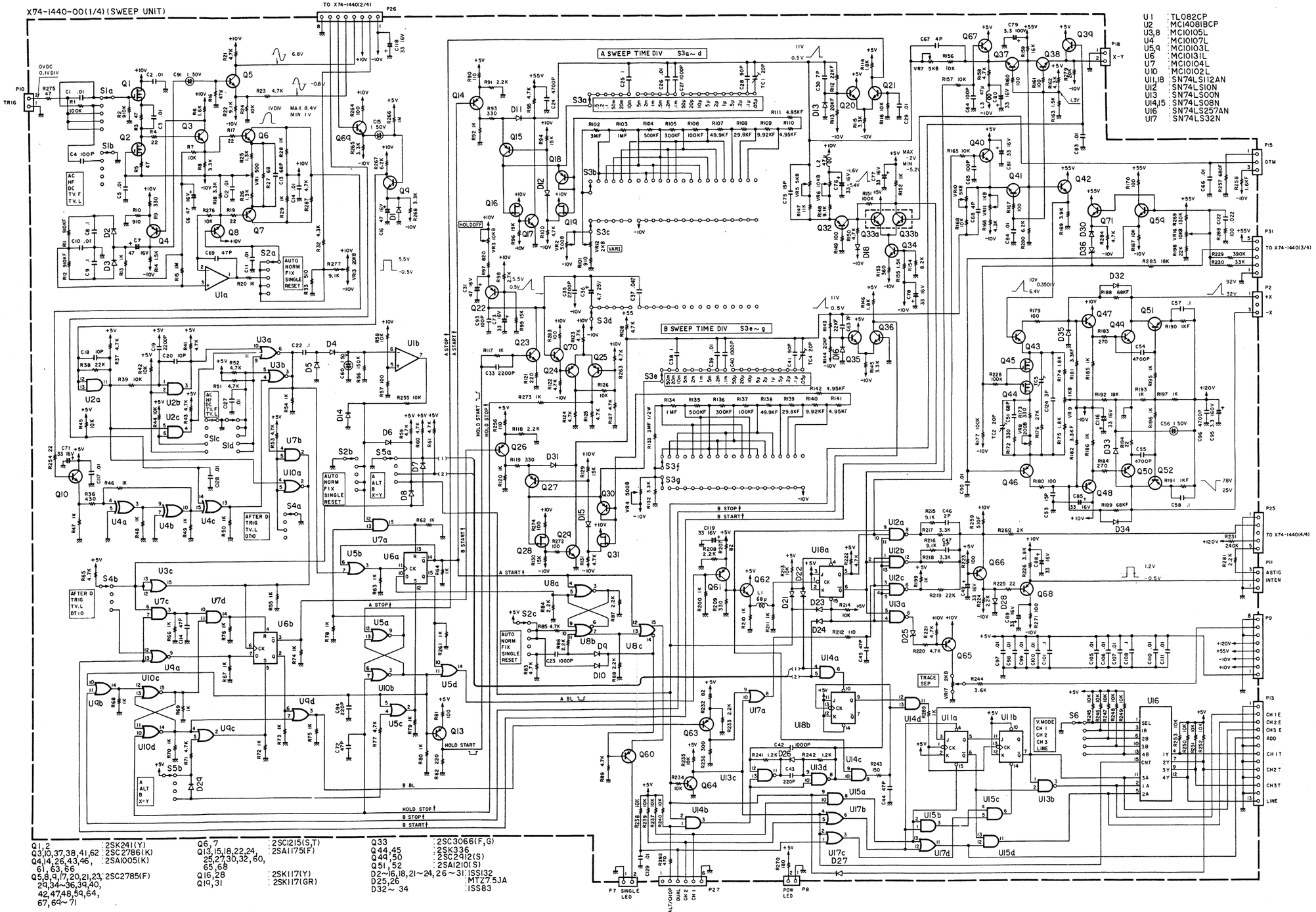
## CS-1065

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Tn1 | SDT-1000 | U1.3 | LF411CN | Q1.9.19.20.69.70 | 2SK304(F) | Q32.33 | 2SC2644 |
| Tn2-4 | SDT-100 | U2.4 | CA3127E | Q34.35 | 2SK184(F) | Q50.51.62-64 | 2SC2785(F) |
| | | D1.4.15 | 1S1544A | Q57.58 | 2SA1175(F) | Q2.10.22.23.28 | 2SC3315(D) |
| | | D10 | MTZ7.5JC | Q30.31 | 2SA1206 | 29.36.37.45.46 | |
| | | D7.12.13.18.19 | MTZ5.1JB | Q3.4.11-14.21 | 2SA1005(K) | 52.53.65-68 | |
| | | D2.3.5.6.8.9 | 1SS132 | 38-41.47-49 | | Q5-8.15-18.24-27 | 2SC3354(S.T) |
| | | 11.14.16.17 | | 54-56.59.71 | | 42.43.60.61 | |
| | | 20.21 | | | | Q44 | 2SC1973 |



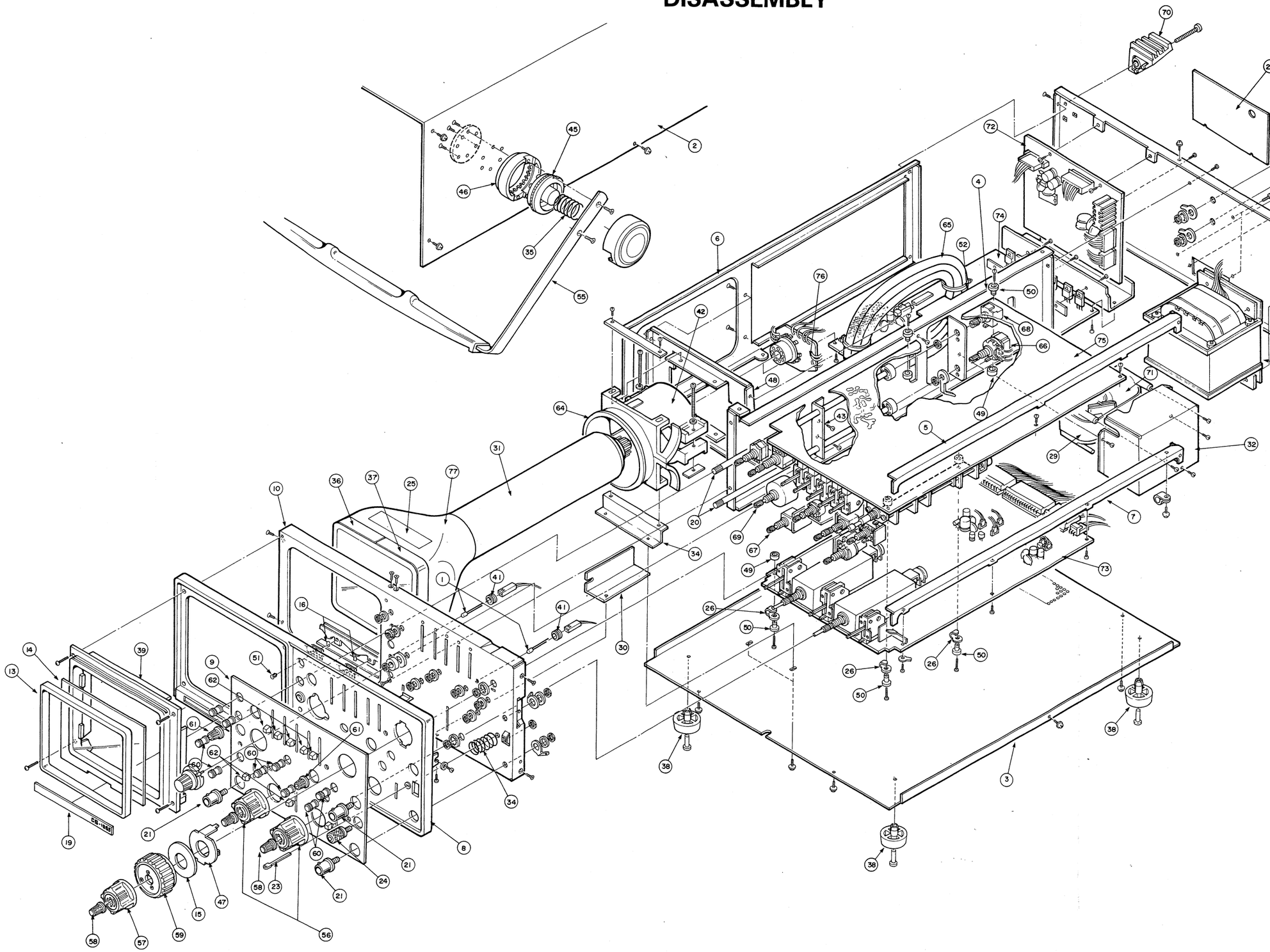
# SCHEMATIC DIAGRAM

## CS-1065



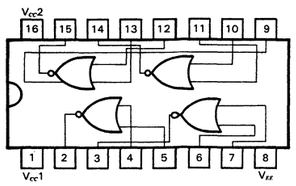

| | | | | | |
|---|---|---|---|---|---|
| Q1,2 | 2SK241(Y) | Q6,7 | 2SC1215(S,T) | Q33 | 2SC3066(F,G) |
| Q3,10,37,38,41,62 | 2SC2786(K) | Q13,15,18,22,24, 25,27,30,32,60, 65,68 | 2SA1175(F) | Q44,45 | 2SK336 |
| Q4,14,26,43,46, 61,63,66 | 2SA1005(K) | | | Q49,50 | 2SC2912(S) |
| Q5,8,9,17,20,21,23, 24,34~36,39,40, 42,47,48,54,64, 67,69~71 | 2SC2785(F) | Q16,28 | 2SK117(Y) | Q51,52 | 2SA1210(S) |
| | | Q19,31 | 2SK117(GR) | D2~16,18,21~24,26~31 | 1SS132 |
| | | | | D25,26 | MTZ7.5JA |
| | | | | D32~34 | 1SS83 |

# DISASSEMBLY

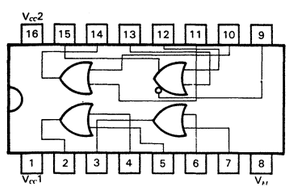



CS-1065

# SEMICONDUCTORS




MC10102L

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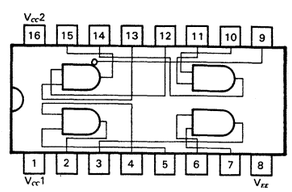
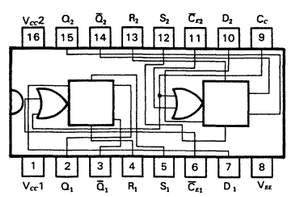
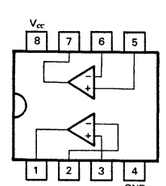


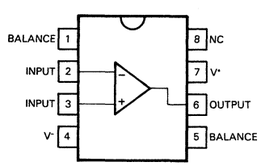

MC10104L



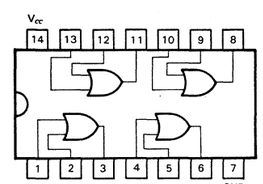

MC10131L



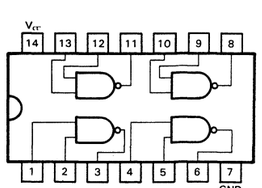

TL082CP
NJM4558D



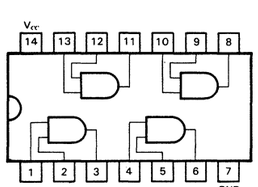

LF411CN



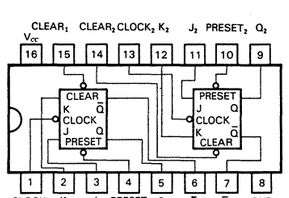

SN74LS32N



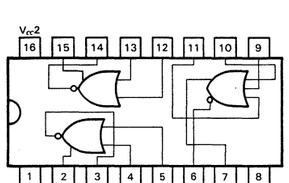

SN74LS00N



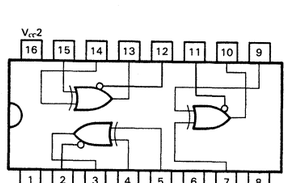

SN74LS08N


CLEAR$_1$ CLEAR$_2$ CLOCK$_2$ $K_2$ $J_2$ PRESET$_2$ $Q_2$
$V_{cc}$
16 15 14 13 12 11 10 9
CLEAR K $\overline{Q}$ CLOCK J Q PRESET
PRESET J Q CLOCK K $\overline{Q}$ CLEAR
1 2 3 4 5 6 7 8
CLOCK$_1$ $K_1$ $J_1$ PRESET$_1$ $Q_1$ $\overline{Q}_1$ $\overline{Q}_2$ GND

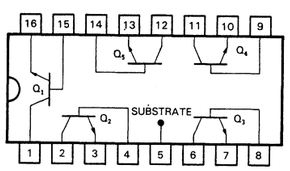
SN74LS112N



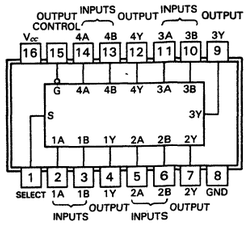

MC10105L



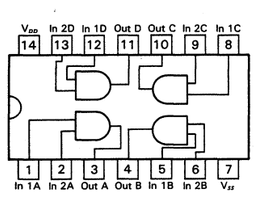

MC10107L



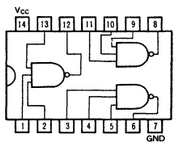

CA3127E



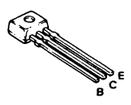

SN74LS257AN



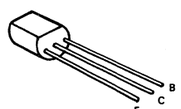

MC14081BCP



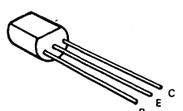

SN74LS10N



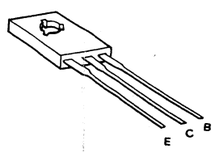

2SA1175 (F)
2SC2785 (F)
2SC2786 (K)



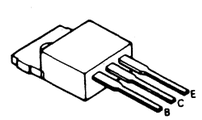

2SA684 (R)
2SA1005 (K)
2SC1215 (S, T)
2SC1384 (R)
2SC2271 (D)
2SC1973
2SA1208 (S)
2SC2910 (S)



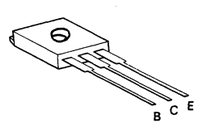

2SC2644




2SC2912 (S)
2SA1210 (S)
2SC3596 (E)

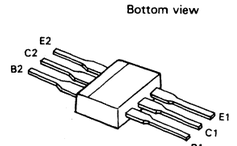



2SD613 (E)

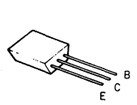



2SB939A (Q)
2SD1262A (Q)
2SD1268 (P,Q,R)
2SD1263A (P,Q,R)
2SB943 (P,Q,R)

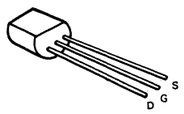
Bottom view



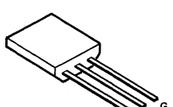

2SC3066 (F,G)



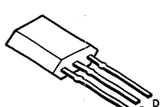

2SC3354(T, S)
2SC3315 (D)



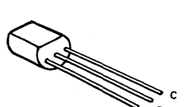

2SK117 (Y)
2SK117 (GR)



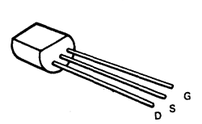

2SK241 (Y)



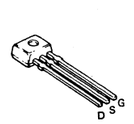

2SK304




2SA1206




2SK336




2SK184 (Y)